CHARACTERIZING THE REGULATORY ENVIRONMENT AFFECTING THE FOREST PRODUCTS INDUSTRY IN CALIFORNIA

TIMBER HARVEST PLAN COSTS

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Abstract

The primary purpose of this study was to establish basic and supportable information on the environmental regulatory impacts on California's forest products industry. More specifically, the study focused on the effects of changing forest practice regulations on timber harvest planning and preparation costs. A survey of wood-processing and forestry consulting firms was conducted in the Summer and early Fall, 2004 seeking data on Timber Harvest Plan (THP) preparation costs, a major component of the transactions cost in California's timber market. Despite the short data collection period, 607 sample observations were obtained. Analysis of the sample data clearly indicate a significant cost-increasing effect from ever-intensifying forest practice regulations, especially as a result of rule amendments in the early 1990s. Prior to 1993, THP costs increased at a compound annual rate of about 3.7%, above inflation. In 1993, there was a dramatic increase in these costs: Coast District planning costs increased 62% and in the Northern District costs nearly doubled. After 1993, THP cost increases continued but at double the rate – about 7.5% per year above inflation. As a result, current THPs that cost around $12,000 to prepare in the Coast District only cost about $2500 30 years ago in today's dollars. The regulatory-induced cost increases experienced by California's forest products industry may play an important role in its competitiveness in the international wood markets. These results may be helpful to the much broader agricultural industry in California given its similarity in land use practices and potential environmental impacts.

Acknowledgments

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INTRODUCTION

It is a popular refrain throughout the U.S. - California has the most restrictive environmental regulations of any state, and perhaps the world, particularly regarding private timberland (Yee 2003, Morgan et al. 2004, Dicus and Delfino 2003). The complex and sometimes conflicting array of federal, state, and local regulations cover essentially all environmental protection issues: forest health, wildlife habitat, water and air quality, archeological sites, land use patterns, and respect for community sentiments (Arvola 1976, Martin 1989). As a result, California's Forest Practices Act (FPA) represents a significant obstacle to timberland owner's attempts to market their product.

California landowners, like those in any other state, must obey federal laws; however, the degree to which they are enforced can be asymmetrically applied depending upon land use/zoning. For instance, the Clean Water Act is currently more intensively enforced on lands zoned for" timber production" (TPZ) than on agricultural lands. For example, protection of riparian areas on TPZ lands involves essentially a "no-entry zone" (within 100 to 300 feet from the stream's centerline, BOF 2000, PRC Title 14 CCR § 916.5, 936.5, 956.5). By contrast, tilling or grazing practices on agricultural lands have generally been allowed up to the high water mark, but these allowances may be changing (NCALRI 1999). Further, unlike agricultural activities (even including "crop" conversions), any commercial harvest of private timber constitutes a project under California Environmental Quality Act (CEQA) which encompasses a host of related state and local environmental regulations.

Purpose

The purpose of this study was to determine the impact of changing environmental laws on transacting the sale of standing timber in California. One of the first and most important obstacles in marketing and harvesting timber involves the preparation of a Timber Harvest Plan (THP), a functional equivalent of a CEQA Environmental Impact Report (EIR). Contractual arrangements between buyer and seller are a function of the normal market factors but have been increasingly affected by California's Forest Practices Act (FPA) requirements.

This study represents Phase II of a longer term study on the effects of environmental regulations on the forest products industry, a component of a larger effort underway by the California Institute for the Study of Specialty Crops (CISSC) to ascertain these effects on the State's agricultural industry. Phase I of the long-term study compared the State's FPA to certification programs administered by international

organizations to promote sustainable land practices (Dicus and Delfino 2003). Phase III, already underway, will build upon the objectives and methodology of Phase II by analyzing the effects of environmental regulations on operational costs in the forest products industry.

Environmental Regulations and Forestry

In economic terms, government-imposed measures to protect the environment are justified under the premise that net social welfare is increased. This implies that the economic benefits of environmental regulations outweigh the costs. By definition, economic benefits and costs are inclusive of all social, environmental and economic factors, not just those affecting business. The problem is that many of these impacts are difficult, if not impossible, to accurately estimate in either quantities and/or values. This is especially so on the benefits side.

The benefits that can result from well-designed environmental regulations include cost savings from improved human health and well-being, improved intergenerational equity from sustained supplies of natural resource endowments, and numerous amenity and intrinsic value enhancements. The problem with studies that attempt to analyze the impact of environmental regulations is that quantification (pricing) of the benefits is generally much more difficult than are the costs.

The costs of environmental regulations can be categorized in several ways. The most commonly perceived effect of environmental regulations is an increase in input costs at the firm level. Additional effects can be incurred at industrial/market levels such as increased transactions costs and uncertainty over meeting the regulatory requirements and gaining final approval. Increases in capital costs can arise from increased risk and uncertainty from rapidly changing environmental regulations. Finally, if these costs exceed the most tangible benefits, then comparative advantage in the affected industries is lost to other states, all other things being equal.

Despite the intended net benefits of government interventions in the marketplace, serious economic costs and social disruptions have resulted from increasingly burdensome and uncertain environmental regulations. Many scientists and policymakers assert that these policies simply export our environmental problems as we protect our ecosystems since our food and fiber consumption continues unabated (Laaksonen-Craig et al. 2003). Domestically, the most direct effects from regulatory burdens include shifts in forest product production and jobs out of State and country, reduction of incomes and State revenues, disruption of community stability, and diminished capacity to implement policy on federal lands within California. Less obvious effects include (1) shifts in land use away from rural/wildland to

more intensive uses such as housing development, (2) reduced forest health, and (3) increased fire hazard in the nation's most fire-prone region.

It must be clearly stated that because quantification efforts favor the cost-side, studies designed to evaluate the effects of environmental regulations tend to avoid the benefit-side. This is also true of this phase of our long-term study of the effect of environmental regulations on California's forest products industry. Nevertheless, we attempt to compare the cost to the landowner with related industrial and economic activity to infer the net effects of the regulation. This includes comparing California's costs and industrial activity with those of other states in the Western U.S.

CALIFORNIA'S FOREST PRACTICES ACT

The dominant forces behind U.S. environmental law and regulations are federal legislation, court rulings and executive branch action. Nevertheless, states possess considerable latitude and discretion in their efforts to obey federal law while meeting the demands of its citizens for healthy economies and environments. Cursory observation shows that regulation of forest practices varies considerably by state. On one end of the spectrum, many states use voluntary systems that promote best management practices. At the other extreme, a number of states rely upon comprehensive acts characterized by mandatory, process-oriented regulations. States with comprehensive FPAs include Oregon, Washington, Alaska and, of course, California. Those using a voluntary or outcome-based approaches comprise primarily the southern states.

California has generally led the U.S. in measures to protect environmental quality; this is particularly so for forests. California's Board of Forestry, established in 1885, was one of the nation's earliest governmental bodies formed to protect its private forestlands. Today, the California Board of Forestry and Fire Protection) is responsible for administering the FPA and promulgating rules and regulations designed to satisfy the law. The California Department of Forestry and Fire Protection (CDF) is responsible for code enforcement.

1973 Forest Practices Act

In 1945, California passed its first forest practices act; however, it was found to be unconstitutional in 1970 on the grounds that the industry was essentially self-regulated (*Bayside Timber v. San Mateo Co*., Superior Court, No 148093). The remedy required new legislation and in September 1973 the Z'Berg-Nejedly Forest Practices Act (AB 227) was signed into law by Governor Reagan. The purpose of this law

was to ensure "maximum sustained production of high quality wood products . . while giving consideration to measures proposed to reduce or avoid significant adverse impacts . . on the land. . ." (Title 14, Chp. 4, Sub 2, Article 1, Part 897).

A year earlier, California enacted the Professional Foresters Law mandating that only licensed professional foresters were allowed to manipulate forest vegetation on state and private lands. Additionally, the law mandated procedures to license professional foresters (Registered Professional Foresters, RPFs). As with all state licensure, civil and criminal penalties are available for failure to adhere to the licensure standards and requirements. The critical nexus with this law and the 1973 FPA was that only an RPF is permitted to submit a THP.

Enactment of the 1973 FPA did not include any urgency provisions and therefore interim logging rules applied until a newly appointed Board of Forestry could promulgate new regulations (Arvola 1976). In November 1974, the new FPA rules became effective. In the intervening year, 2500 harvest plans were filed with CDF (Arvola 1976).

The new FPA had barely been in force when new litigation imposed another major overhaul of the law. The Natural Resources Defense Council filed suit against three timber companies operating in the basin surrounding the newly formed Redwood National Park in Humboldt County, claiming that timber operations represented a "project" under CEQA which was passed the same year (*NRDC v. Arcata Redwood Co., Humboldt Co. Court, No. 54212*). In January 1975, the court ruled in NRDC's favor, forcing emergency action by Governor Brown to bring the FPA into conformity with CEQA.

Confusion reigned for nearly 6 months until new Forest Practice rules and THP regulations took effect. It now seems appropriate to assign 1976 as the year when this revised Timber Harvest Plan formed the basis for the current provision. All subsequent policy changes essentially represent amendments to the 1976 status.

After 1976, a THP is a functional equivalent to Environmental Impact Report (EIR) under CEQA, continuing to incorporate all relevant federal environmental law. Some of the key features added to the THP centered on CEQA's public disclosure requirements such as feasibility analysis, public review, and appeals procedures. Analysis of cumulative effects from logging was another requirement imposed by CEQA. The requirement to provide public notice of a THP was added in 1979 in response to a State Supreme Court ruling in *Horn v. County of Ventura*. Table A.1 in Appendix A attempts to summarize

these and other significant changes. Appendix B.2 presents the timeline for THP approval – a minimum of 60 days.

Turmoil in Early 1990s

Legal and regulatory actions seemed to remain fairly steady until the early 1990s when an array of environmental issues arose primarily from issues unique to California but with some impetus from federal legal and regulatory actions. A number of voter initiatives were proposed to dramatically alter forest practices on California's private forestlands but none passed. Nevertheless, the political momentum culminating in the Sierra Accord in 1991 (and the related Grand Accord in 1992) combined with court rulings forced the Board of Forestry to issue a litany of emergency rules. Adopted almost entirely next year, these rules required the RPF to analyze and propose protection measures for old growth, watershed cumulative impacts, domestic water sources, sustained yield, as well as a variety of administrative procedures (Delfino 2004). More details on these and other regulatory actions are provided in Appendix A.

Perhaps the most significant among these new regulations resulted from the listing of the Northern Spotted Owl (NSO) as "Threatened" under the federal Endangered Species Act (ESA) in 1989. Though most of the impact of this listing was directed at the management of federal lands in California, the "take" provisions under ESA caused major changes to THP preparation and logging practices on private lands. Contemporaneous with NSO (and other sub-species) regulations were a host of other newly listed species under both ESA and California's ESA (CCR 895.1 and 959.10). The Coast District (essentially the coastal counties above the San Francisco Bay Area, a.k.a. the redwood region) was especially hard hit by these new regulations. Not only is this region part of the range of the NSO but also the newly listed Marbled Murrelet that some biologists claimed needed large, old trees for nesting habitat.

Watershed protection was also central to the significant changes and expansion of regulations in the early 1990s. One highly significant change was the loss of the general waiver for non-point source pollution from silvicultural operations (Section 208 of the Clean Water Act) in 1993. Afterward, each THP had to include an individualized stream monitoring plan to address concerns over non-point sources of pollution during harvesting operations. As permanent roads and bridges were considered a primary source of stream sedimentation, a new array of rules for post-harvest road maintenance took effect.

This relatively sudden addition of numerous amendments and expanded review from multiple agencies transformed the original CEQA process into a complex, time-consuming process that rivals some of the

most complex EIRs (see the cursory summary of the 1993 rule changes in Appendix A) . The burden of regulatory enforcement shifted from CDF to the RPF as a result of FPA rule changes finalized in 1991 (Delfino 2004). Timberland owners pay for the cost of this added burden, not the timber purchaser. See Appendix B.1 and B.2 for the current THP checklist Timeline, respectively. Appendix B.3 is provided to describe the THP filing, approval and appeal process and procedures. Table 1 summarizes the typical activities associated with preparing a THP for final approval, distinguishing between those included under normal contractual arrangements from activities that take place when the THP encounters opposition.

For almost two decades the only agency to which a landowner and their consulting forester was required to respond was the CDF. Occasionally, other state agency officials would become involved if the environmental issues were deemed significant. Usually though, only the CDF forester and the proposing RPF were present at the pre-harvest inspections (PHI). The PHI was a critical step in the approval of a THP when two experts, one representing the landowner and the other the people, would confer on-site to reach consensus with environmental protection the dominant theme.

Today, the number of State and federal agencies that are involved in approving a THP are manifold. At one recent two-day PHI on a THP at the Valencia Unit of Swanton Pacific Ranch, 10 individuals were present representing the following agencies: CDF (2), Cal Fish & Game, Regional Water Quality Control Board, California Geological Survey, County Planning, State Archeologist, and a Santa Cruz Supervisors with an Assistant. Swanton Pacific is a 3600 acre property under the management of Cal Poly, San Luis Obispo, for demonstrating quality timber management. This management has been internationally recognized by the Forest Stewardship Council (FSC) in 2004 (see Dicus and Delfino 2003 on the comparison between California's FPA and FSC certification standards).

Table 1. Activities involved in preparing a THP for approval

Generally included under normal conditions lacking serious challenges	Activities not included under normal conditions
CEQA Feasibility Analysis (e.g., watercourse, wildlife, market and community/neighbor conditions)	Need to prepare a long-term management plan to ensure sustained yield of high quality wood products for "large" properties
Evaluation of timber quantity and quality	
Decision analysis on choice of silvicultural system	
Watercourse evaluation and surveying sale boundaries	
Marking timber for harvest, if needed	
Location of logging roads, landings, and yarding	New road work planning and oversight

routes	
Watercourse monitoring plan prepared	
Evaluation of cultural resources and archeological survey	
Survey for wildlife species of concern under the Endangered Species Act	Additional wildlife surveys if a "listed" species is present or critical habitat is involved
Evaluation of potential insect or disease problems	
Evaluation of potential cumulative impacts	
Filing of Notice of Intent, THP document preparation and interaction with CDF	
Pre-harvest inspections (PHI) involving CDF forester and numerous other state and local agencies	Delays due to conflicts between state agencies over plan requirements
Public Hearings & related work leading to final approval	Additional testimony and work when PHI results in plan modification
Oversight of logging (depending on contract with landowner)	Oversight of logging operations
Oversight of road work for compliance with water quality laws upon completion of logging operations	
Oversight of site preparation for regeneration	
Survey to ensure adequate regeneration is achieved within 2 years from end of logging	Litigation costs if THP is appealed

Note: An approved THP remains active for 3 years, with the opportunity to extend it an additional 2 years if approved by CDF.

Recent legislation transferred final regulatory authority over the THP approval process from CDF to the Regional Water Quality Control Boards (SB 810, signed into law 10/12/03 and recently perfected under administrative law review). This policy adds further uncertainty in the supply sector. A proposal by the Governor in Spring 2004 to force the private timber seller to pay the government's administrative costs in the THP approval process has compounded the uncertainty over rising regulatory costs. What recourse would timber sellers have under a system where they had to pay for all legal/regulatory challenges? Their only means would be to sue which poses even greater uncertainty when an individual attempts to sue the state. This could create a serious problem of *free-riding* -- wherein parts of society receiving unpaid benefits at the cost of others.

CHANGES IN CALIFORNIA'S WOOD PRODUCTS INDUSTRY

This section of the report provides background economic information on the forest products industry needed in evaluating any policy action that could be considered as inhibiting California's competitiveness. Solidwood products, commonly considered as lumber only, have been and remain the mainstay of California's forest products industry. To understand the effects of the FPA, it is useful to characterize the State's economic status and trend relative to the U.S. and regional forest products industry. The single best measure that captures the economic condition of the wood market is the price of lumber products as measured by the Lumber and Wood Products Producer Price Index (PPI) Composite (Bureau of Labor Statistics, 2004). This price index is provided in Figure 1 below.

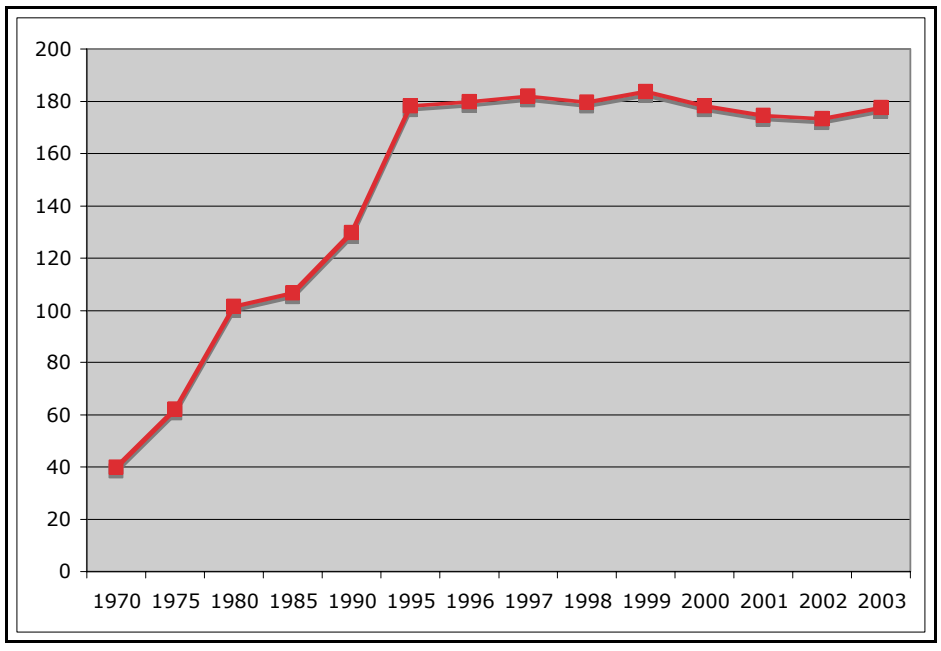

Figure 1. Producer Price Index for lumber and wood products, 1973 – 2003.

Clearly, lumber prices escalated rapidly during the 1970s and 80s then abruptly "flattened" to a constant rate in the early 1990s. Economic forces that created this structural change are manifold but the effect is simple – constant solidwood prices are indicative of, and intensify, competition and raises uncertainty over returns on production investment. Any policy action that is asymmetric could cause the affected firms to lose competitive position.

The time period when U.S. lumber prices stopped its historic escalation corresponds almost exactly with the era in California when forest practices regulations were greatly intensified, described in the previous section of the report. To understand the condition of California's forest products industry it is important to contrast it with its nearest economic rival -- Oregon, the dominant wood producing state in the Western U.S.

California Softwood Lumber Production

California's wood products industry is becoming increasingly concentrated -- fewer small, local firms being replaced by larger, more efficient mills designed for smaller logs. This trend is seen in comparing the industry data over the last 30 years in Figures 2a-d. While California's share of the lumber market declined from 25% to 15% on a volume-basis, Oregon's remained relatively stable at around 37%.

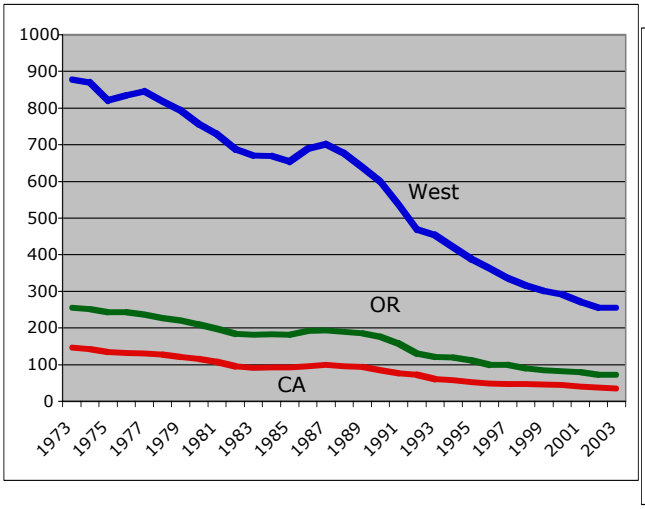

Figure 2a. Operating sawmills, 1973 - 2003

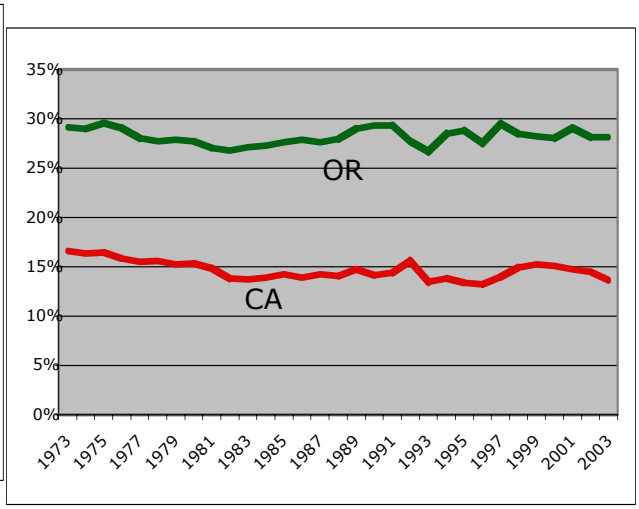

Figure 2b. Percent of Western mills, 1973-2003

Since 1973, the average California softwood mill's production increased from 37 to 76 mmbf per year (WWPA 2004). Since 1988, 49 mills were closed in California, drastically reducing processing capacity

from 6 billion board feet (mmbf) per year to 2.4 mmbf per year (Morgan et al. 2004). As economic theory predicts, these losses were comprised principally of smaller mill closures, mills that are less efficient and originally designed for larger timber that is no longer available. Solidwood processing facilities (i.e., sawmills) increasingly comprise the dominant share of the wood products industry in the Pacific Northwest and more so in California (see Figures 2c and 2d).

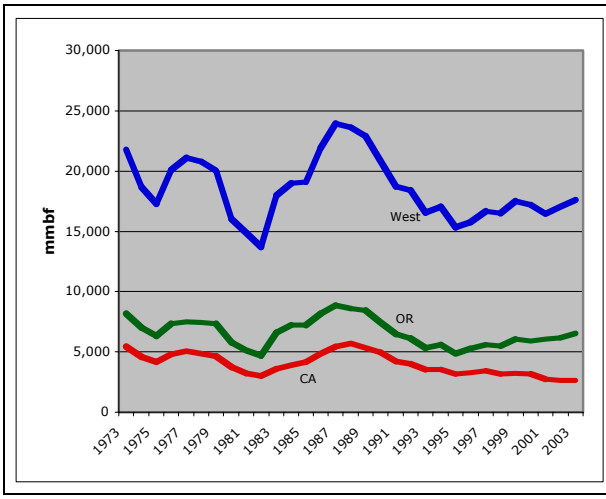

Figure 2c. Softwood production, 1973 - 2003

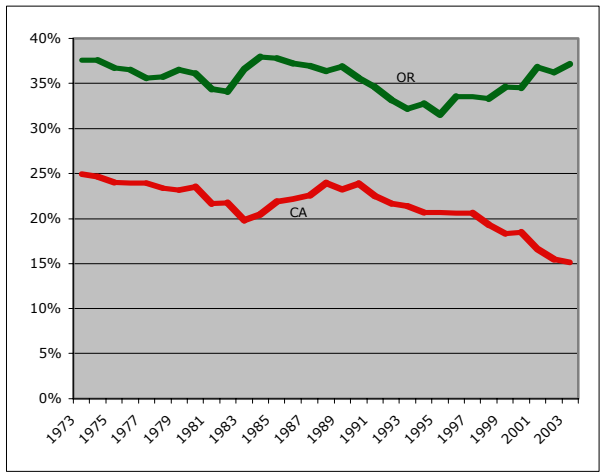

Figure 2d. Percent of Western production, 1973-2003

Pulp, Paper and Panel Production

The Pacific Northwest does not have a major share of the paper and related composite materials market, a result of a variety of biophysical, social, economic and certainly regulatory conditions. Any state, like California, containing significant public forestland is constrained by federal statutes that began in the mid-1970s, laws that essentially favored growing large trees.

Pulp and paper production requires regular, high-volume flows of wood raw material. This in turn creates economic incentives to shorten rotation crop cycles. California's, and most of the West's, land use and socio-political environment is not favorable for the type of land management practices needed to support a pulp and paper industry. As evidence, California plywood and veneer production facilities declined from 26 in 1968 to only two in 2000. Pulp and paperboard production declined from 17 facilities in 1968 to 7 in 2000 (Morgan et al. 2004). However, the South, with its much smaller proportion of forestland held publicly, is not so constrained. Therefore, it is not unexpected that market share on a volume basis has significantly migrated to the South. This worsens the timber capital investment environment in the West and increases the likelihood of land conversion to other uses, many of which have greater environmental-degrading impacts.

Timber Harvests

As with most natural resource based industries, wholesale wood product markets are increasingly international in structure. The U.S. has been a net importer of wood products for much of the later 20th century. California was a key player in this process. Until around the mid 1970s, California was a net exporter of wood products. Since then, California's population boom has fueled a rapid increase in wood consumption. Laaksonen-Craig et al. (2003) estimate that lumber consumption alone grew by 1 billion board-feet (mmmbf) during the 1990s. Other wood product consumption grew even faster, e.g., wood panel products. At the same time the State's total wood production (all wood products including lumber) declined to a little over 2 mmmbf by 2000 (see Figure 3).

Declining timber harvests in California are not distributed equally across ownership classes. Furthermore, as changing economic conditions give rise to harvest declines, firms and resource owners alter their decisions regarding investment in timber production. The result is that fewer small timber sales occur based on the principle of declining returns to size, i.e., economies of size. Figures 4a and 4b reinforce this fact.

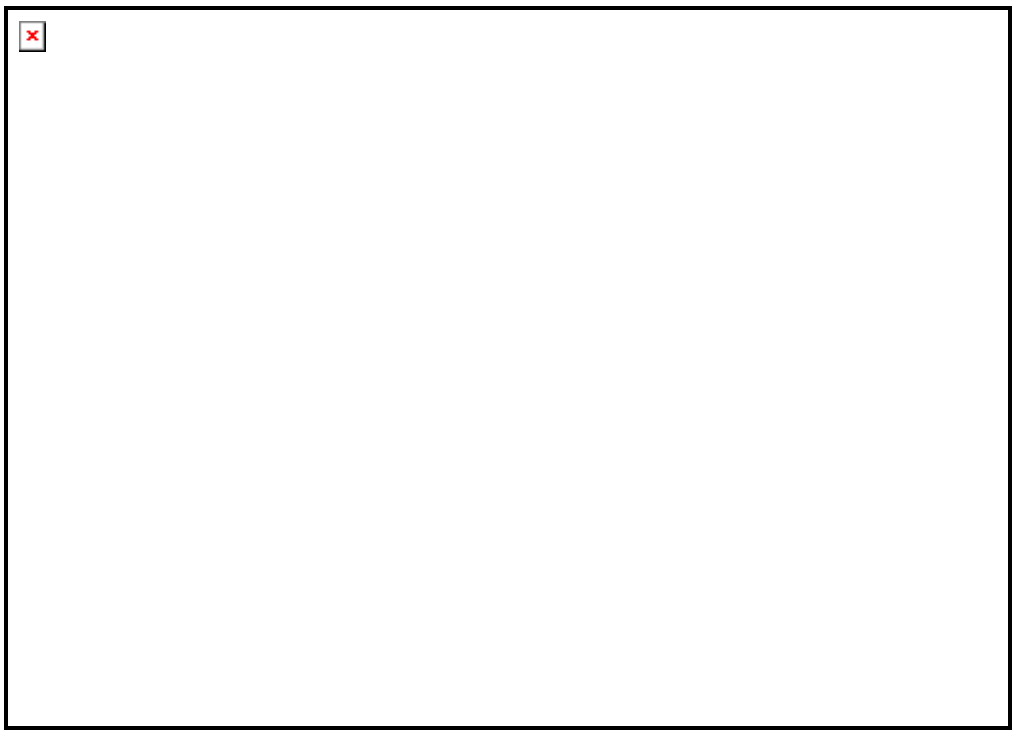

Figure 3. California's harvested, processed and imported timber volumes

As a result of a more uncertain and lower return future, resource owners are less likely to invest in land uses with declining returns in the long-run. Thus, owners of small timberland acreages should be expected to redirect their land management objectives uses with higher returns. This phenomenon is supported by the information illustrated in Figures 4a and 4c where average timber sale size begins to increase again about the time when the dramatic changes in the FPA in 1991 were expected (Hall 2004).

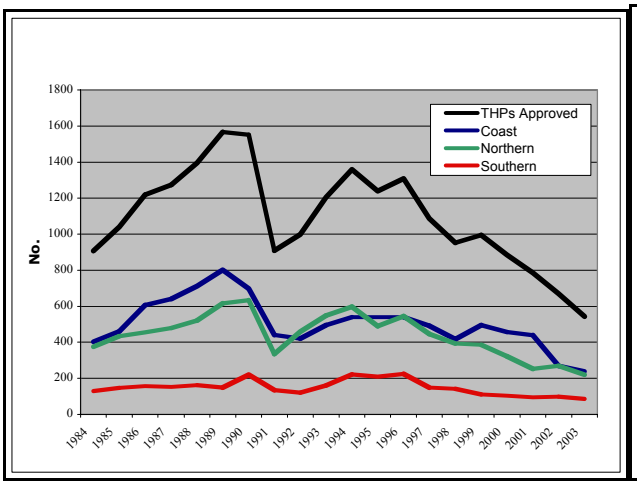

Figure 4a. THPs by CDF District, 1984-2003

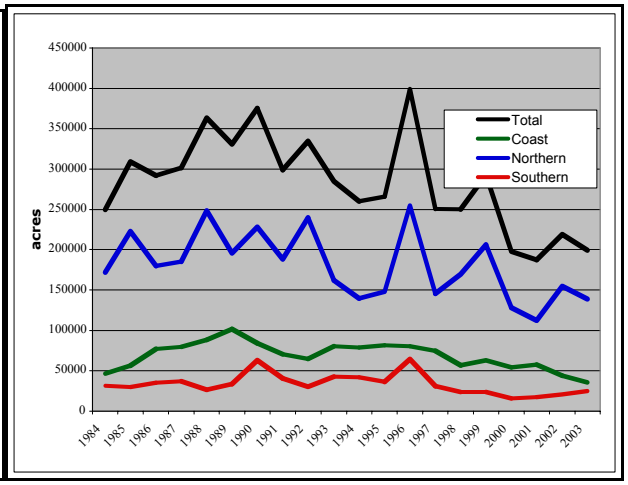

Figure 4b. Total THP acres by CDF District, 1984-2003

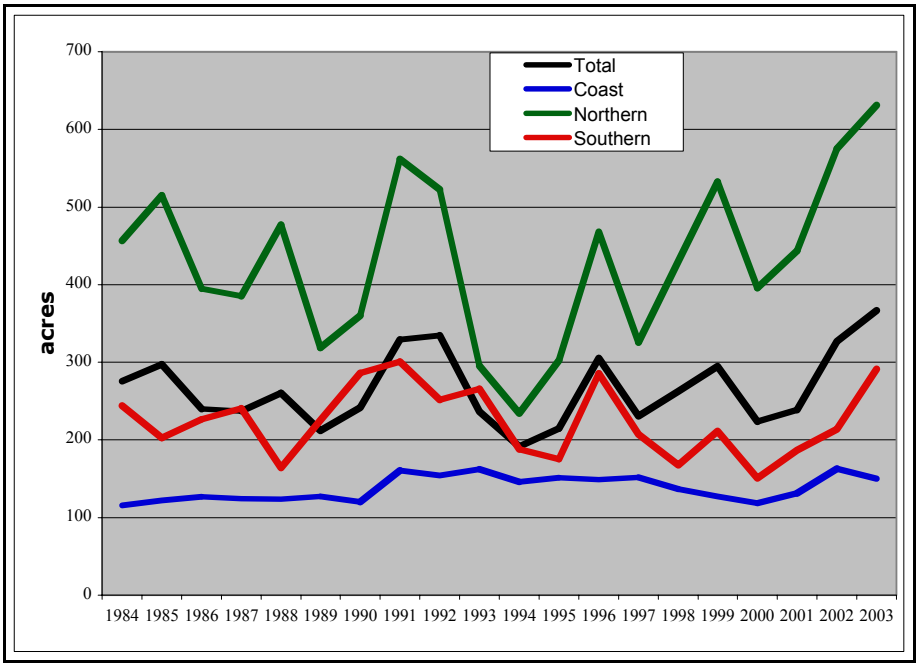

Figure 4c. Average THP size by CDF District, 1984-2003

The greatest increase in average sale size took place in the Northern District where the relatively lower volumes per acre create a natural incentive to expand THP size (see Figure 4c). In the Coast District, where regulatory pressures are the greatest, average sale size also increased but not as fast, perhaps owing to the fact that environmental impacts concerns grow rapidly as sale area increase (see Table A.1, Appendix A for district related regulatory changes).

Structural Causes of Trends

Causes for these structural changes involve a complex array of economic, social and political conditions. The post-war building boom and the aggressive logging practices created pressure for unsustainably high timber harvests. Federal policy changes on the public lands in California supported these economic conditions (see Figure 5). Imports of cheaper Canadian lumber and technological change in building materials have also been major forces behind California's shift to becoming a net wood importer.

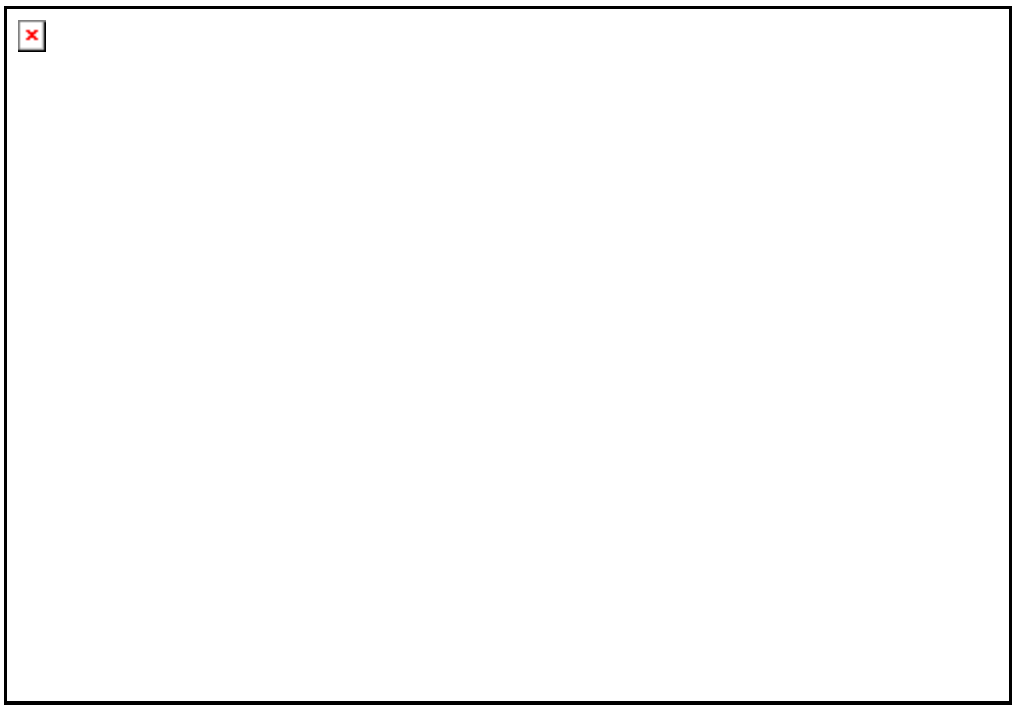

Figure 5. California timber harvest volume by landowner class, 1947 -2001

Somewhat reflective of the changing socio-political climate, California's policies have de-emphasized resource utilization in favor of amenity values requiring greater environmental protection. This trend is most noticeable in its forest resource management policies, i.e., the California Forest Practices Act. It is

suggested that the rapid growth and intensity of environmental regulations, for which California is internationally known, is a significant contributing factor to loss of competitiveness.

In the study by Morgan et al. (2004), they surveyed of 32 mill managers, land managers, and other key executives on issues important to California's forest product industry. Their results revealed that forest practices and related environmental regulations were the most important issue affecting the industry's competitiveness (see Table 3).

Table 2. Issues important to California's forest industry leaders, last 10 years

Rank	Importance of issues over the last 10 years	Very un-important -3	Mostly un-important -2	Slightly un-important -1	Neutral 0	Slightly Important 1	Mostly important 2	Very important 3
		Percent						
1	California regulations	3	--	9	--	--	6	81
2	Market Conditions	3	--	6	6	13	22	50
3	Timber availability	13	6	3	--	3	9	66
4	Federal regulations	3	6	3	16	16	25	31
5	Harvesting/milling technology	3	6	9	19	31	19	13
6	Skilled labor availability	9	--	16	22	25	12	16

Source: Morgan et al. 2004.

The common perception among the public is that regulations and other cost-increasing effects on firms are simply passed along to consumers. However, theory and observation demonstrate that consumers in any country or region within a country purchase based upon price almost exclusively (Hartsfield and Ostermeier 2003, Kilgore and Blinn 2003). Wood product markets, like those for agricultural products, are international in scope. Efforts by any single nation or "state" within a nation to increase environmental protection are generally not paid directly by consumers but born by exporting nations that generally lack such protections. The key word is "directly" since the costs are ultimately born but not necessarily by those intended or with the resource allocation effects envisioned.

Considerable resources have been spent in the U.S. and in other developed nations to establish standards for sustainable forest resource management, anticipating that the increased costs will be born by consumers within those countries (e.g., Forest Stewardship Council certification, an international organization backed by numerous environmental interest groups). However, research has not been

supportive of this notion. Consumers have not overwhelmingly expressed a willingness-to-pay for such green products, forcing companies to either pass these costs on to timberland owners or absorb them due to competition from non-certified companies (Hartsfield and Ostermeier 2003, Kilgore and Blinn 2003).

Figure 6 illustrates how returns to private timberland owners and to the public's lands were reflected symmetry in societal expectations of resource stewardship until the mid 1990s (California Board of Equilization 2004). Declining public values are easily explained by the significant reduction in volume and size of timber sold resulting from the listing of the Northern Spotted Owl. Since 1993, private timberland owner rents have declined with only one "up-year" in 2001 despite a fairly steady wholesale market value for lumber and wood products. This corresponds perfectly, including the predictable lagged effect, with the significant expansion in forest practice regulation scope and intensity between 1991 and 1993.

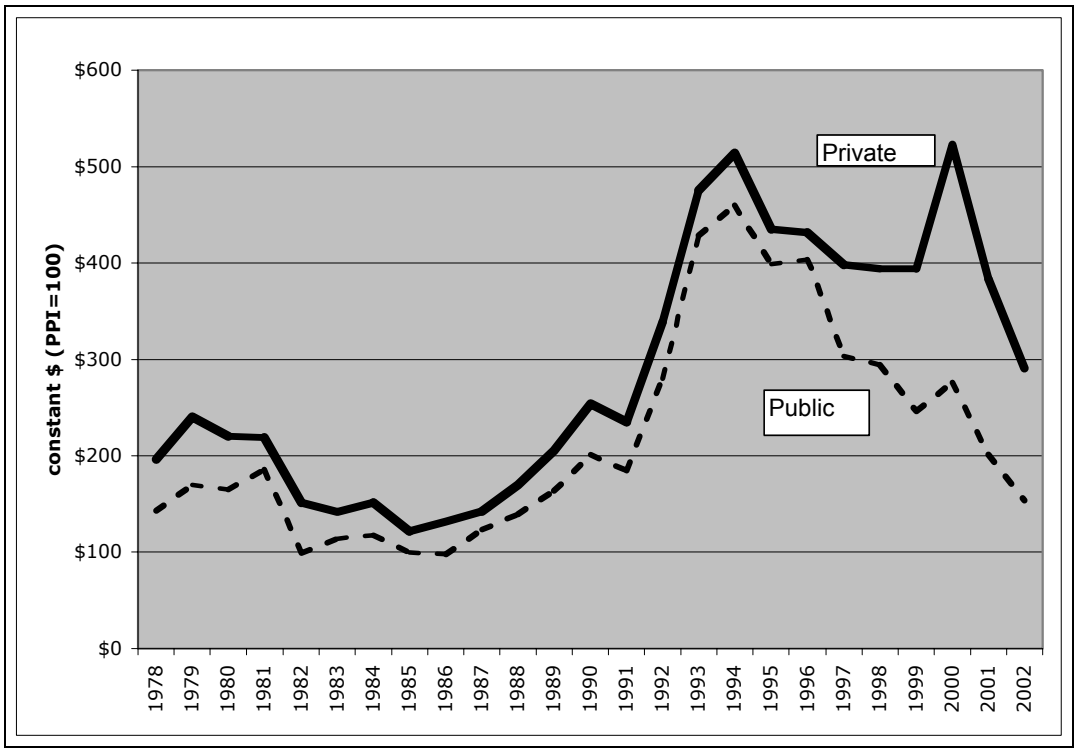

Figure 6. Returns to timberland owners (rents) for retaining land use in timber, 1978-2002.

Declining returns to private investment coupled with mounting regulatory hurdles create incentives to convert to other land uses. Small landholdings become economically infeasible and an increasing number of forest landowners are induced to harvest sooner than otherwise planned due to future uncertainties over the regulatory requirements (Johnson et al. 1997).

TRENDS IN TIMBER HARVEST PLAN COSTS

Given the short timeline of this project, one realistic goal was to summarize the existing scientific (peer-reviewed) literature on the status, trend and economic impact of California's ever-changing forest practice laws and regulations. Nevertheless, we set our primary goal to estimate the trend in the cost of preparing Timber Harvest Plans (THPs) due in large part to the growing concern by those preparing THPs over the costs. Until recently, interest in the subject was limited. Recent political events, such as the Governor's attempt at reorganizing state agencies and the regulatory function, have raised the importance of this issue. To estimate the trend in THP preparation costs (the key transaction cost in California's timber market) requires collection of primary data – a risky undertaking given the short timeline of the project.

As early as the late 1970s, the costs of complying with the new FPA law were estimated to average about $20 per thousand board feet (mbf) of timber sold at a time when stumpage prices averaged less than $100 per mbf– roughly a 20% increase in production costs (Green et al. 1981, Vaux 1984). Since then, environmental regulations have grown in breadth and intensity, imposing higher costs during a time when international competition grew substantially, epitomized by the widely publicized increase in, and continued trade policy conflict over, Canadian imported wood products. Thus, costs of the present regulatory burden may be exacting an even greater impact on competitiveness.

There have been few independent studies on the cost of environmental regulations to California's forest products industry. Perhaps the first comprehensive review and analysis of California's Forest Practice regulations was by Green et al. (1981), which summarized internal studies by CDF and the judgment of experts. They estimate the average cost of preparing a THP at $750 in the late 1970s, equivalent to about $.50 per mbf. Costs incurred by the state to administer and enforce the FPA averaged about $1,150 per plan, or about $1 per mbf (Green et al. 1981).

As described earlier, the goal of this study was to determine the causes and effects of the growing cost of preparing a timber sale in California. Fundamental to the goal is the need to accurately estimate these costs since the inception of the FPA in 1973. However, the source of this information is held privately by two basic groups of organizations – wood processing firms and consultants. The challenge is to obtain this proprietary information in scientifically valid manner while ensuring confidentiality and avoiding collusion concerns.

METHODS

The first task in our methodology was to identify those who possess the needed information, i.e., the population for our survey. Industrial, wood-processing firms prepare timber harvest plans (THPs) employing either staff foresters or consulting subcontractors. There are a number of conditions that inhibit or even prevent firms from responding to our survey. Private non-industrial forestland (NIPF) owners can hire consultant foresters or rely upon the staff foresters of the firm purchasing their timber. This fact complicates our sample methodology.

Quality of record keeping varies dramatically across firms and especially over time. Beginning in the early 1990s, most consultants computerized their accounting records, but earlier paper records often were not archived. Some consultants dropped THP preparation services and therefore were withdrawn from the population. Furthermore, as described earlier in this report, the wood processing industry in California has experienced considerable consolidation since 1973. Although industrial firms have computerized their records since the 1970s, buyouts and mergers resulted in lost records or changes in record keeping practices.

Based on our initial contacts with these firms, we identified 28 wood processing firms and 24 consulting firms from which to request data on THP preparation costs (see Appendix C.1 for the final list of firms that comprise our population). These firms are not quite the entire population of the professional foresters currently preparing THPs but certainly represent the vast majority, particularly on a volume processed basis.

The instrument used to collect the data was a survey form mailed to the population group. Appendix C.2 provides the survey instruments sent to wood-processing and consulting firms. Instructions for completing the survey are shown on the instrument form. Typical random selection was not practical. CDF's database of THPs includes only the RPF's name submitting the plan, not the firm for which they work. As such, it is problematic to connect the firm with the THP.

Each firm was given the opportunity to respond with a complete set of THPs for which records exist. In lieu, they were asked to submit a subset under the following conditions: the first 3 THPs approved per year for consultants, and the first 8 approved for processing firms. More were requested from processing firms because they generally submit a greater number of THPs per year than do consultants. We decided to request a fixed number of THPs per year in order of approval, in lieu of the preferred but unlikely

complete download of data. (However, one consultant essentially provided a complete set of his approved THPs.) This sample data collection method is effectively random given (1) there is no known relationship between THP cost and order of approval and (2) approval order is not related well, if at all, with order of submission to CDF.

The data requested in the survey instruments differed slightly between processing firms and consultants. The common data items for each THP were

1. Calendar year approved
2. THP number (at a minimum, each number consists of CDF district, county and sequence number)
3. total preparation cost,
4. number of plan acres
5. if the timber was marked (binary)
6. if WLPZ considerations were "significant" (binary)
7. if wildlife considerations were "significant" (binary)

As described in Appendix A, long-term plans were required of all industrial processors and NIPF landowners with holding greater than 5000 acres starting in 1996. The cost of preparing these long-term plans can influence subsequent THP preparation costs. Therefore, industrial processing firms and consultants were asked to indicate whether a given THP was associated with a Sustained Yield Plan (SYP) or Option A, or Non-industrial Timber Management Plan (NTMP), respectively.

Communications with each firm indicated a high degree of interest and desire to cooperate to the extent practical. Due to record-keeping practices, some were unable to provide sufficiently meaningful data. In early June 2004, surveys were mailed (or emailed) to the finalized list of firms that have the potential to respond.

RESULTS

Response to the survey was better than expected given the short data collection period, June - September 2004. Furthermore, this survey was conducted during the summer, the busiest time when timber harvesting occurs. Five wood-processing, and three consulting firms responded, providing 607 sample THP sale observations (see Appendix D for a complete listing of sample THP observations). The most commonly cited reason by wood-processing firms was that their recordkeeping systems did not separate

internal staff time devoted to individual THPs. As for consulting firms, several no longer offer THP preparation services nor were records archived.

Table 3 provides a summary of the useable THP data by firm class and CDF district. See Appendix C.1 and C.2 for listings of firms representing the sample population and response. Average THP size was 378 acres while the median THP size was only 73 acres (see Table C1-1 in Appendix C.1). This clearly indicates that there are a few very large THPs while most tend to be less than 100 acres.

Table 3. Response by CDF District and type of firm

CDF District	Processing Firms	Consultants
Coast	303	137
Northern	105	42
Southern	20	0
Total	428	179

THP cost data was deflated using the GDP Deflator (Bureau of Labor Statistics, 2004). Deflation converts current dollars to constant dollars where 2003 was adopted as the base year index of 100 (Bureau of Labor Statistics, 2004). Averaging the THP costs in constant dollars each year provides an initial perspective on the trend in costs shown in Figure 7.

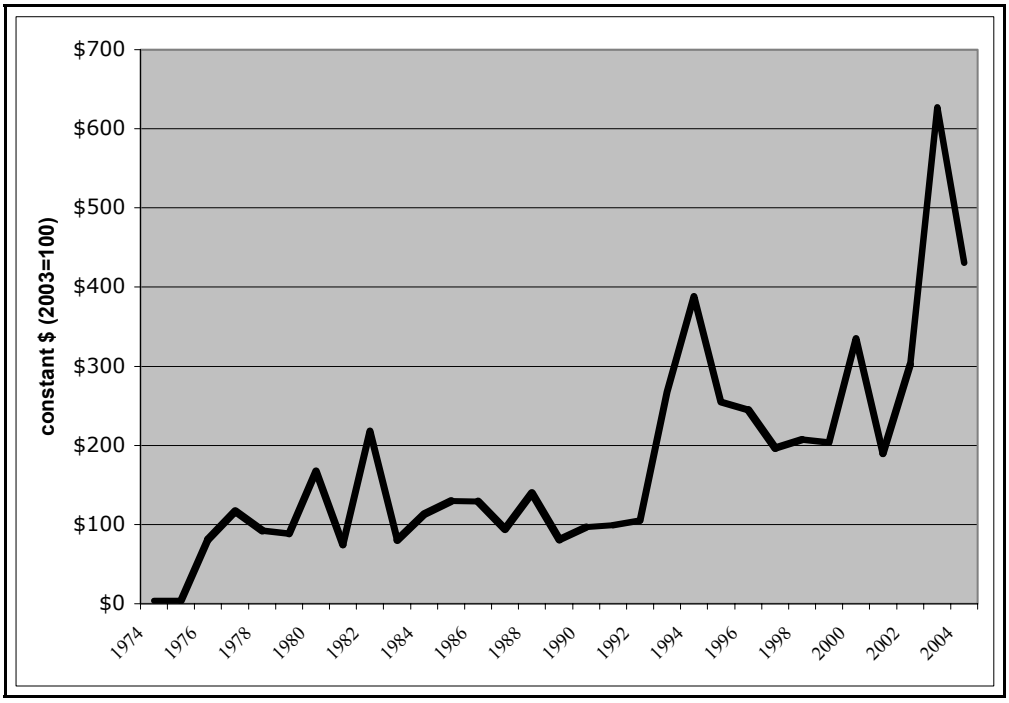

Figure 7. Average annual cost per acre of preparing a THP, 1974 – 2004.

The sample data reveal an obvious upward trend in THP costs especially beginning in the early 1990s. Prior to 1993, one could conclude from visual inspection that THP preparation costs were relatively constant over time. There seems to be a clear correlation between the dramatic changes in environmental regulations in the early 1990s and this simple view of THP cost trends (see Table A.1, Appendix A). Certainly, further analysis is needed before more definitive conclusions can be drawn on the THP cost increases resulting from mounting regulatory requirements.

As described in Methods, data were collected on some of the key sale and environmental conditions that are known to influence THP preparation costs. These conditions can be used to account for the variability in THP costs in constant dollars. Table 4 provides description of the variables constructed from the raw data.

Appendix C.1 presents descriptive statistical information on the variables, along with graphical illustrations of the relationship between THP preparation costs and THP size combined and by CDF District. The likelihood of encountering environmental conditions that are subject to existing environmental regulations increases with sale area. This expectation is clearly born-out in the graphs of THP costs vs. sale area (see Figures C3-1 through C3-3 in Appendix C3).

Table 4. Description of variables used in statistical analysis

Variable Name	Description
YEAR	Year of THP Approval
ACRES	Number of acres in THP
DISTRICT	CDF District: 1=Southern, 2=Northern, 3=Coast
N	1 = CDF Northern District, 0 otherwise
S	1 = CDF Southern District, 0 otherwise
MARKED	1 = timber was marked for harvesting in THP preparation, 0 otherwise
WLPZ	1 = THP sale contained significant watercourse & lake protection zone issues, 0 otherwise
WILDLIFE	1 = THP sale contained significant wildlife protection concerns, 0 otherwise
PLAN	1 = THP was associated with a long-term management plan (SYP or NTMP), 0 otherwise
YRDMMY	1 if YEAR >= 1993, 0 otherwise

Ordinary least squares (OLS) regression was used to better understand sale characteristics that influence THP cost in addition to sale area. To conduct such techniques, variables must be defined that are (1) at least intervally-scaled, (2) independent of one another, and (3) somewhat normally distributed.

Predictive Model

It seems clear from Figure 7 that the trend in THP costs has been increasing. The rate of increase may not be linear. Exploratory linear regression analysis was conducted, but model fit was improved by using a log-linear model where THP costs in constant dollars, the dependent variable, were changed using a natural logarithmic transformation. In addition, re-definition of the YRDMMY variable was performed to ensure that the proper timing of the relatively sudden increase in THP costs was accurately modeled. Regression results of using this log-linear model are presented in Appendix C.4.

The behavior of the error term (unexplained variation in THP costs) is a major concern in robust statistical procedures such as OLS regression. Two key assumption on error term properties are that there is (1) no correlation among adjacent observations, a.k.a., autocorrelation, and (2) constant variance across time-related observations. These error term are especially relevant to time-series data. The OLS regression only revealed a likely violation of autocorrelation requiring regression using an autoregressive error term variable. Results from application of this statistical technique are presented in Appendix C.5. This model demonstrated a very good fit to the observed data, accounting for over 70% of the variation in THP costs. All predictor variables, except Southern CDF District (S) and MARKED (significant at

nearly 10%), were significant at the 1% level. The prediction equation form the autoregressive log-linear model, excluding only S, is shown below.

$$\mathit{ln}(\text{THP Cost}) = -68.736 + 0.0385(\text{YEAR}) + 0.00013(\text{ACRES}) - 0.527(\text{N}) + 0.087(\text{MARKED}) + 0.374(\text{WLPZ}) + 0.181(\text{WILDLIFE}) + 0.204(\text{PLAN}) + 0.424(\text{YRDMMY}) + 0.312(e_t - e_{t-1}) + e_t$$

The annual average predicted THP costs from this model are illustrated in Figure 8. The result is that the **average THP costs nearly $30,000 today** up from around $2,200 in 1974 – ***a 14-fold increase in just 30 years***. That is amounts to a compound annual rate of 8.5% above inflation.

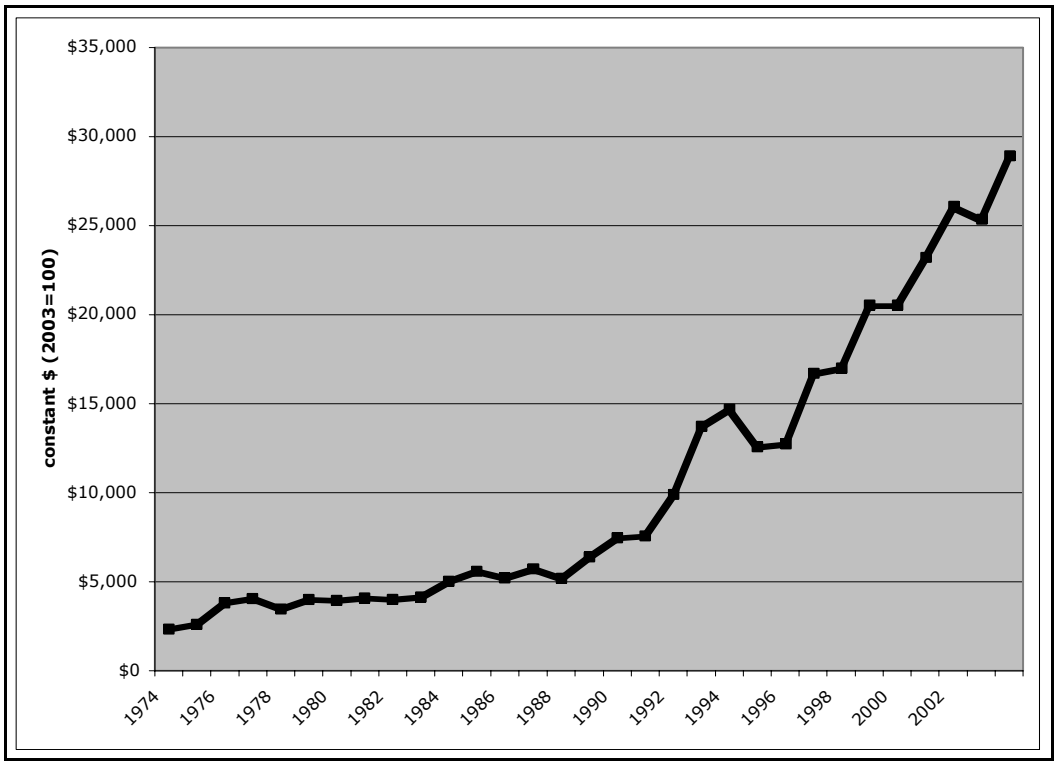

Figure 8. Predicted average annual THP costs over time from the autoregressive log-linear model

Perhaps a more clear way of communicating these results is to describe the predicted THP costs of the typical timber sale. Limited to the few sale characteristics sampled, the typical THP is one that was unmarked, with significant watercourse and wildlife concerns, and not associated with a long-term management plan (see Tables C3-1 and C3-2 in Appendix C.3). The average timber sale acreage differs significantly between the Coast and Northern Southern CDF Districts. The Coast District averaged 138

acres over 30 years, while the Northern averaged 431 acres. (Again the distinction between Northern and Southern CDF Districts was insignificant in our model.) The resulting standardized predicted THP costs in constant dollars for both the Coast and Northern CDF Districts are shown in Figure 9. THPs have always been somewhat more costly in the Coast District owing to the more complex ecological conditions and amenity concerns of the redwood region.

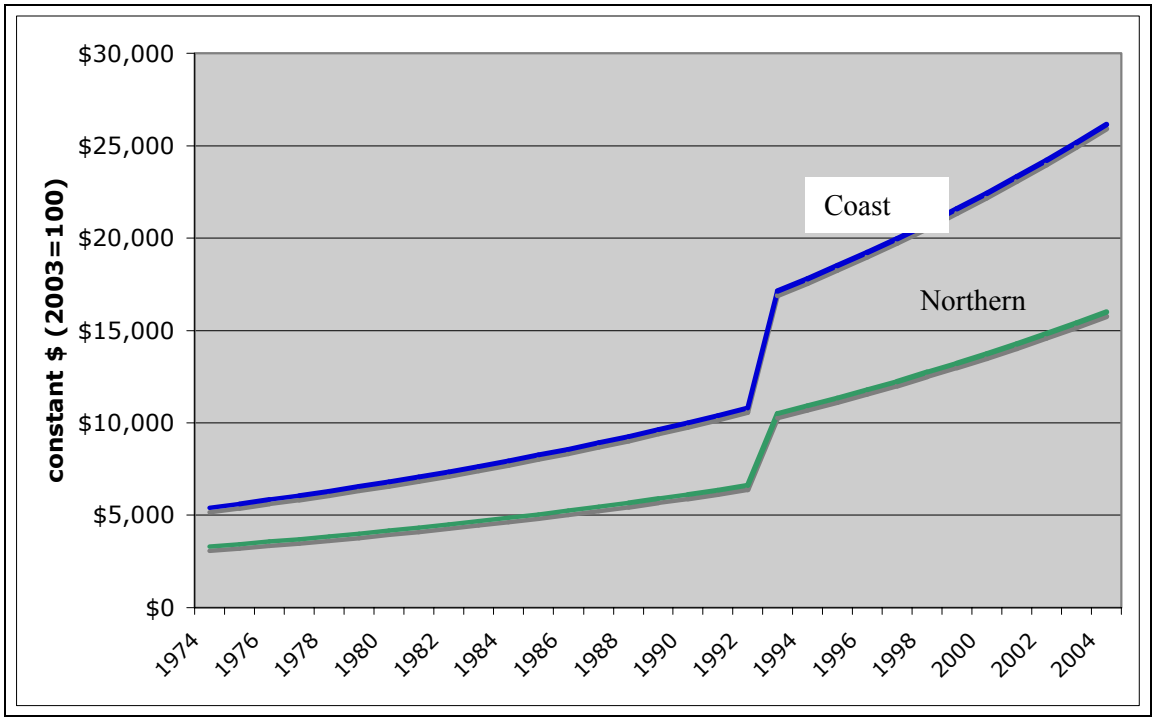

Figure 9. Standardized THP costs for the average THP size in the Coast (138 acres) and Northern (431 acres) CDF Districts

Under these standardized assumptions, THP costs increased at a compound annual rate of about 4%, above inflation. The dramatic "jump" in THP preparation costs in 1993 detected in our model amounts to nearly 60% in just one year. The standardized cost to prepare a THP in the Coast District was $26,000 in 2004 but only about $5,400 30 years ago in today's dollars. That represents a 5-fold increase over 30 years in the Coast District and nearly as much in the Northern District.

One important reason why these standardized conditions results in a somewhat lower rate of increase in THP costs results from the relatively recent requirement to prepare a long-term management plan for larger properties starting in 1993. Without such a long-term plan approved (i.e., Non-industrial Timber Mgmt. Plan, Sustained Yield Plan, or Option(a)) by CDF, no subsequent THP on the property could be approved. Figure 10 illustrates the impact on the standardized predicted trends in THP costs with the

inclusion of a long-term management plan. This relatively new requirement for larger properties nearly doubles the THP costs in 1993, resulting in a 6-fold increase over the 30 years.

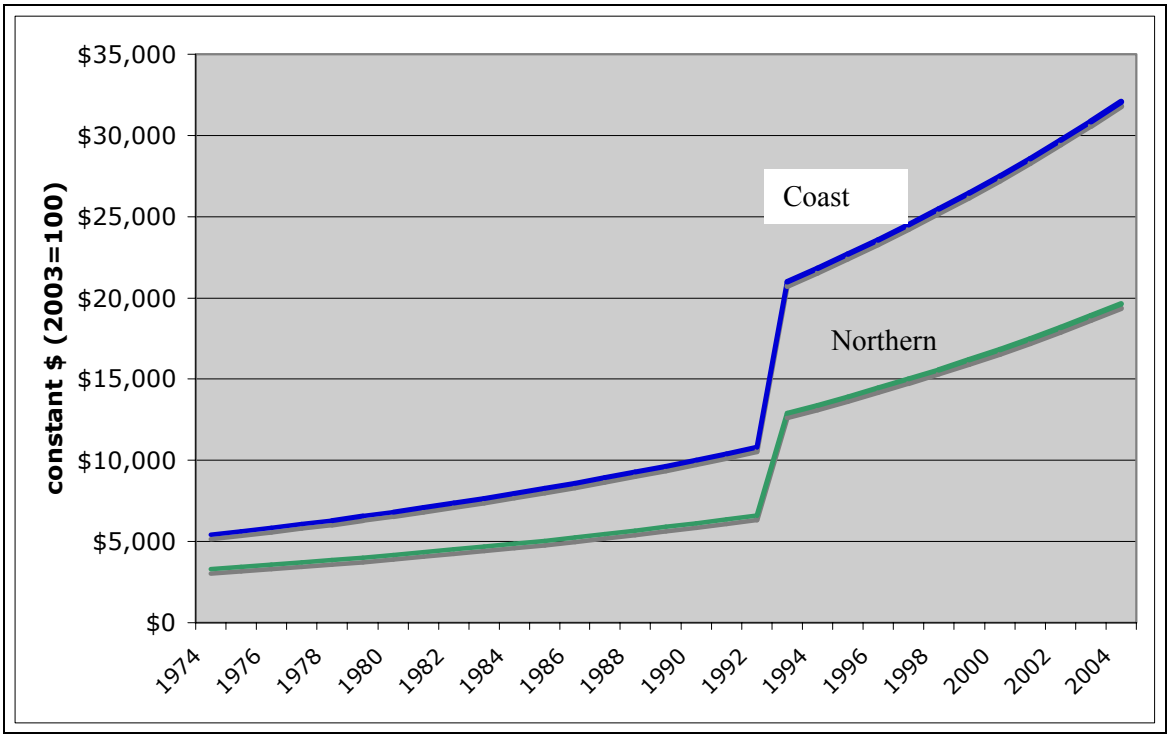

Figure 10. Standardized THP costs for the average THP size in the Coast (138 acres) and Northern (431 acres) CDF Districts with a long-term management plan

CONCLUSIONS AND FUTURE RESEARCH NEEDS

California's natural resources are increasingly under pressure to meet demands for both consumer goods and amenity uses. These conflicts create political pressure to protect environmental values while resources are extracted. No resource-intensive industry has been more the focus of these political pressures than the forest products industry. Starting in the early 1970s, laws and regulations have expanded in the breadth and intensity. The early 1990s were a time of greatly expanded forest practice regulations.

Analysis of economic conditions that affect forest products industry indicates that California is increasingly importing wood to meet its growing consumptive demands. Federal and State legislation has played a significant role in the State's declining use of its public and private forests for wood production. It is difficult, however, to draw a clear cause and effect relationship between California's increasing

environmental regulations and declining wood production and market share. Statistical analysis points to a significant correlation between these conditions. More elaborate economic analysis is needed to model these connections which is far beyond the scope and scale of this project.

Unlike the relationship to the broader industry impact, a clear cause and effect condition exists between growing environmental regulations in California and increased timber harvest planning costs. California's approach to protecting environmental values as resources are extracted is to impose a system of process-oriented regulations unlike other states that focus on environmental outcomes. The result in California is more regulations mean more time/costs in planning and preparation work to where a typical THP in the Coast District now costs over $30,000. This cost does not reflect the significantly larger costs incurred if the THP encounters opposition. Nor does the average cost include costs arising from a timber owner's inability to time the sale to optimal market conditions due to the mandated time period of the THP approval process.

With net revenues on small timber sales (around 20 acres) reaching only about $50,000, a THP that costs at a minimum of $5,000 would discourage most from even considering it. Furthermore, California's Forest Practices Act forces considerable alteration of logging operations, increasing logging costs that reduces economic rents (a.k.a. "stumpage") to timberland owners. Thus, California timberland owners are "sqweezed" on both the cost and revenue sides.

This study represents Phase II of a long-term study investigating the effects of California's environmental regulations on its economic and environmental health. Phase I compared the State's forest practice regulations to the international programs that certify sustainable resource management. This study helped sharpen the debate over the merits of the California's process-oriented forest practice regulations vs. the outcome/goal-oriented approach to international certification programs.

Phase III will investigate the regulatory impact on operational costs in the wood processing industry. The approach used in this next study involves comparing operating costs between California and Oregon while controlling for sale conditions other than any asymmetry of environmental regulations. This study will also obtain information on planning cost differences in order to bolster the conclusions drawn from this project. With better understanding of the effects of California's historic approach to protecting its environment while producing goods and services, we will be better able to judge the effectiveness of current policy.

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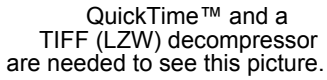
Appendix A
Table 1. Summary of Key Events and Regulatory Actions affecting the FPA

Year	Description	Origin of Issue(s) Federal	State
1973	Passage of SB 183 - Z'Berg-Nejedly FPA resulting from court ruling that the 1945 "forest practices act" was unconstitutional.		X
1976	Revised FPA's THP to conform to CEQA in response to successful legal action by NRDC.		X
1981	SB 856 removed county level control over THPs which in turn resulted in special rule subdistricts administered by CDF		
1982	Implementation of Erosioin Hazard Rating System requiring an addendum to each THP. Adoption of Resource Conversation Standards for stocking requirement rule.	X	
1983	Implementation of Roads and Landing Rules. Implementation of Watercourse and Lake Protection Zone Rules.	X	
1988	Resulting from a 5 year multidisciplinary team review process of timber harvest operations in response to Section 208 (non-point source) of Clean Water Act, a range of new rules, documentation, and RPF/LTO training were adopted.	X	
1989	Implementation of new Erosion Control and Maintenance rules including a three year prescribed maintenance period after completion of harvesting. Adoption of new site preparation rules for protection of multiple resource values. Requires an addendum to THP. Formation of the first of numerous task forces dealing with cumulative impacts as a result of ruling in *EPIC v. Johnson, 1985*.	X	
1990	Implementation of new Erosion Hazard Rating system. Adopted emergency rules for Northern Spotted Owl habitat areas.	X	X
1991	Failure of voter initiatives (Sierra and Grand Accords) forced BOF to adopt numerous emergency rules most of which were adopted permanently. The major ones were as follows. Adoption of new Cumulative Impacts rules requiring additional THP material in Addendum #2; new in-stream monitoring plans and protocols per THP. Adoption of major new WLPZ and Roads & Landings rules to enact non-point source pollution (CWA Section 208) recommendations after expiration of general waiver for silvicultural practices. Additional rule amendments for Northern Spotted Owl habitat areas. Adoption of emergency rules for protection of Marbled Murrelet habitat. Adoption of rule amendments for archeological and historical sites. Further regulatory constraints on even-aged mgmt. (i.e. clearcutting). Requirement for industrial and large non-industrial owners to develop long-term mgmt. plans (SYP, Option A, NTMP). More information requirements in THP when late seral stage stands (sometimes called "old growth") are present.	X	
1992	Revision of Marbled Murrelet habitat protection rules	X	X
1993	Adoption of new THP rules for "sensitive" watersheds	X	

1994	"35 points of light" - rule and definition clarifictions. Adoption of new Sensitive Watersheds & Domestic Water Supplies rules directing the BOF to classify a watershed as "sensitive" thereby requiring more intensive protection measures and greater documentation in relevant THPs. Adoption of new Silviculture for Sustained Yield rules resulting from failed voter initiatives to protect perceived forest values. Adoption of new rules for operations in late succesional stage stands.	X	X
1995	"23 points of light" - clarification of 23 rules/definitions left over from 1994.	X	
1997	Adoption of new Class III WLPZ rules to increase protection measures on ephemeral streams during harvesting operations.	X	
1999	Adoption of revised Cumulative Impacts Assessment rules impacting interpretation of Winter Period rules. Seven other rule amendments and definitions were adopted.	X	
2000	Adoption of major new protection measures for Threatened and Impaired Watersheds ("interim rules"), Coho Salmon Consideration rules, Plan Submitter, RPF and LTO Responsibilities rules resulting from CWA Section 303d actions.	X	
2001	Requires Certified Engineering Geologist to review timber operations in or near steep WLPZ areas. Requires complete water drafting plan be included in THP when drafting takes place. Increase WLPZ tree retention requirements and designation for "large, old trees"	X	
2002	Adoption of Interim Watershed Mitigation Addendum rule package proposed by landowners and resource managers by requiring additional watershed analysis, site-specific concerns and consideration of additional protection measures for watersheds containing listed anadromous salmonids. Desgination of "Threatened and Impaired" watersheds.	X	X

Sources: Martin 1989, Yee 2004, Delfino 2004.

Appendix B.1
Timber Harvest Plan Checklist, 2004



Appendix B.2

THP Approval Timeline & THP Components

THP Process

Purpose: to ensure max. sustained yields while protecting the environment; public disclosure per CEQA

Elements of Plan

1. Names, addresses, phone #'s of owners, RPF and Operator licenses
2. Neighbor notification
3. Operations area: legal description, district, stocking report, date of start, products to be harvested, skid trails
4. Indentify regeneration method, intermediate treatments, special harvest methods, etc.
5. Logging systems employed
6. Location and explanation of new permanent roads greater than 1 lane
7. Erosion controls
8. "while giving consideration" criteria
9. Arch. site survey and protection procedures, if needed
10. Insect and disease problems
11. T&E species inventory and protection procedures, if needed
12. Maps (logging area, skid trails, landings, streams, perm. roads, bridges, slides, understocked areas, etc.)

Minimum THP Timeline (days)

Feasibility Analysis conducted prior to filing as per CEQA

Notice of Intent

Review Team Mtg. (1)

Filing Date

Notice of Filing

Preharvest Inspection

Public Hearing (CEQA)

Response to sign. issues

Director's Decision Date

Mitigation Measures by Rev. Team per CEQA

Timbre Ops. begin

Appendix C.1

List of Wood Processing Firms contacted for Data Collection

Wood Processing Firms	Response	
Bascom Pacific, LLC	No	No response
Brooks Walker	No	No response
Collins Pine Co.	Yes	102 THPs from 1974 to 2003
Crane Mills	No	No response
Fruit Growers Supply Co.	No	No response
Green Diamond Resource Co. (formerly Simpson Timber	Yes	224 THPs from 1976 to 2003
Gualala Redwoods	No	No response
Hancock Forest Mgmt.	No	No response
Hearst Corp.	No	Data not available
Lonestar Timber LLP	No	
Mendocino Redwood Co., LLC (formerly Louisiana Pacific)	Yes	24 THPs from 1999 to 2003
Pacific Lumber Co.	Yes	55 THPs from 1976 to 2003
PG&E	No	Unable to respond in time
Red River Forests Partnership	No	No response
Roseburg Forest Products	No	Unable to provide data in time
Sierra Forest Products	No	No response
Sierra Pacific Industries	No	Data not in form suitable for study
Siller Bros., Inc.	No	No response
Soper-Wheeler	No	THPs prepared by consultants
Southern California Edison	Yes	23 THPs from 1980 to 2003
The Campbell Group	No	No response
Timber Products Co.	No	No response
Trinity River Lumber Co.	No	No response

List of Forestry Consulting Firms contacted for Data Collection

Forestry Consulting Firms	Response	
AD&D Forestry Services	Yes	124 THPs from 1993 to 2004
Continental Resource Solutions, Inc.	No	Records not available
Darcie Mahoney	No	Data not available
Edward A. Tunheim	No	No response
Environmental Resource Solutions	No	No response
Forest Slopes Mgmt.	No	Records not available
Frank & Dean Solinsky Co.	No	Promised but did not respond
Gary F. Howard	No	
George Belden	Yes	12 THPs from 1999 to 2003
Hunt Surveying & Forestry Inc.	No	No response
J.E. Fleming & Assoc.	No	No response
Jacobszoon Forest Consulting	No	Data unavailable
James L. Able Forestry Consultants, Inc.	No	Records not available
Kent & Associates	No	Records not available
Natural Resources Mgmt. Corp.	No	No response
North Coast Resource Mgmt.	No	No response
Prielipp Consulting	No	Records not available
Ralph Osterling	No	No longer providing THP services
Shasta Land Mgmt. Consultants	No	No response
Stoneman Forestry Services	Yes	44 THPs from 1992 to 2004
Western Timber Services, Inc.	No	Records not available
William G. Apger	Yes	No response

Appendix C.2

Survey Form for Wood-Processing Firms

Firm Name: _____

Guidelines for completing this form:
- Select 8 THPs per year (first approved) per CDF District.
- Year corresponds to year in which THP was approved.
- Record the THP#.
- Record the cost (or person-hours spent on preparation through approval).

In order to help account for variation in THP preparation costs, we need a simple "check-off" on the following items:
- Was the sale marked or not?
- Were WLPZ concerns significant or not?
- Were wildlife or other environmental concerns significant or not?
- Indicate if the THP is associated with an SYP (S) and/or an HCP (H).

Year	THP#	Acres	Cost	Silvicultural Method 1= unmarked, 2 = marked	WLPZ 1= insig., 2= sig	Wildlife Concerns 1=insig., 2= sig	SYP=S, HCP=H
2003							
2002							
2001							
2000							
1999							

OVER

Survey Form for Wood-Processing Firms

Forester/Firm Name: _____

Guidelines for completing this form:
- Select 3 THPs per year (first approved) one per acreage category (small, medium and large). We have suggested some acreage breaks only as guides.
- Year corresponds to year in which THP was approved.
- Record the THP#.
- Record the charge billed to the client (Cost).

In order to help account for variation in THP preparation costs, we need a simple "check-off" on the following items:
- Was the sale marked or not?
- Were WLPZ concerns significant or not?
- Were wildlife or other environmental concerns significant or not?

Size Categories
- small (<75 ac)
- medium (75-150)
- large (>150)

Year	THP#	Acres	Cost	Silvicultural Method 1= unmarked, 2 = marked	WLPZ 1= insig., 2= sig	Wildlife Concerns 1=insig., 2= sig	NTMP
2003							
2002							
2001							
2000							
1999							
1998							
1997							
1996							
1995							
1994							
1993							
1992							
1991							
1990							

OVER

Appendix C.3

Descriptive Statistics and Graphs of THP Data

Table C3-1. Descriptive Statistics on ACRES

ACRES	
Mean	378
Standard Error	36
Median	73
Mode	40
Standard Deviation	881
Minimum	1
Maximum	7065

Table C3-2. Frequency Response on Dichotomous Variables

Variable	*No*	*Yes*
MARKED	351	256
WLPZ (Significant)	422	185
WILDLIFE (Significant)	456	151
PLAN (Long-term Plan in-place)	464	143

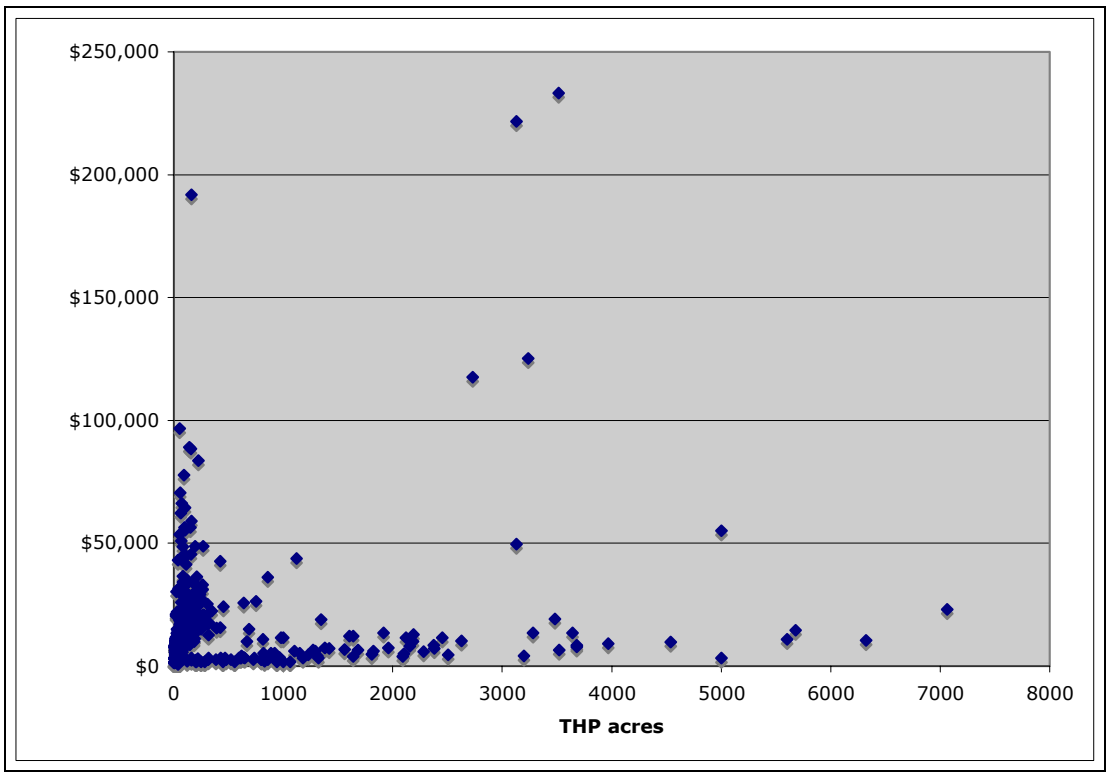


Figure C3-1. Plot of THP Preparation Costs (in constant dollars) vs. THP acres

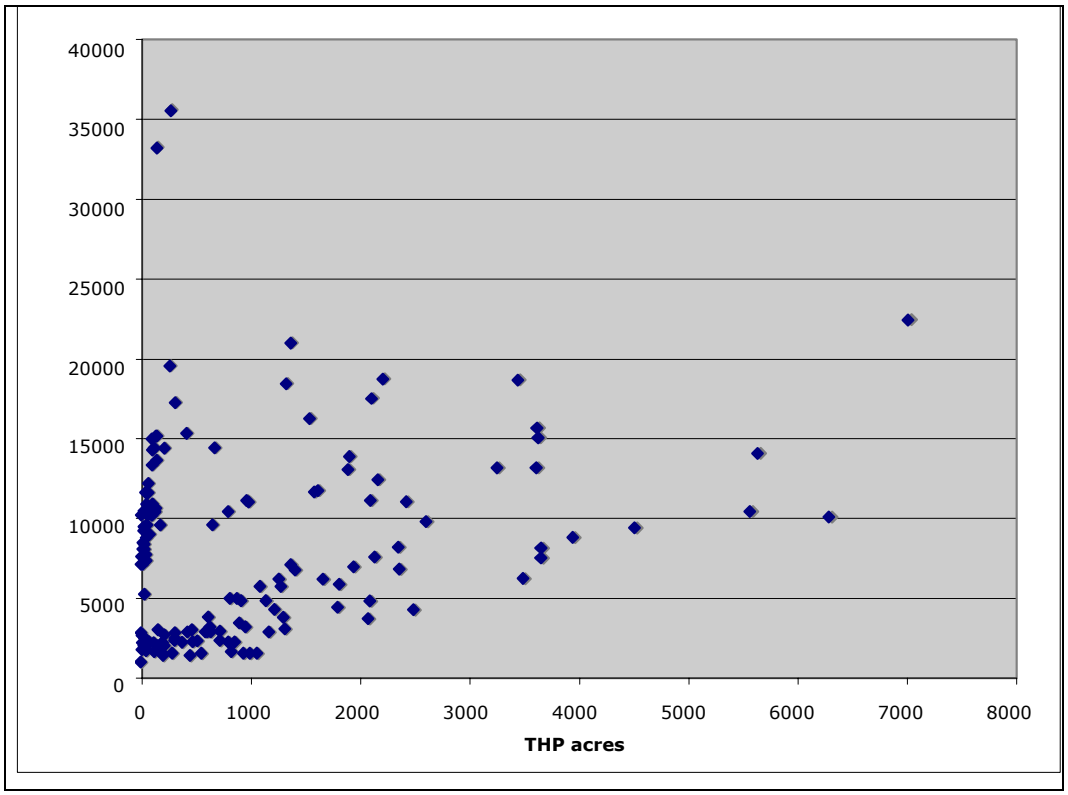


Figure C3-2. Plot of THP Preparation Costs (in constant dollars) vs. THP acres occurring in the Northern and Southern CDF Districts of California

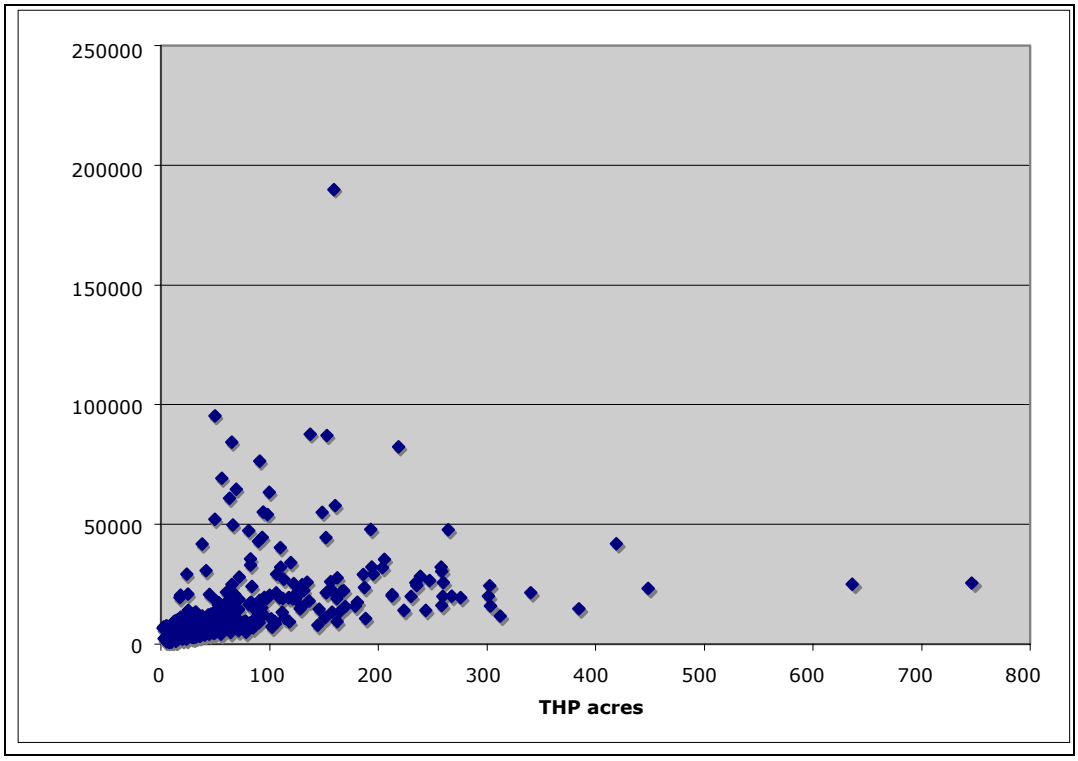


Figure C3-3. Plot of THP Preparation Costs (in constant dollars) vs. THP acres occurring in the Coast District of California

Appendix C.4

Statistical Analysis of THP Data
Log-Linear Model

Model Summary, Dependent Variable: LNCOST

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.845	.714	.710	.48470634	1.407

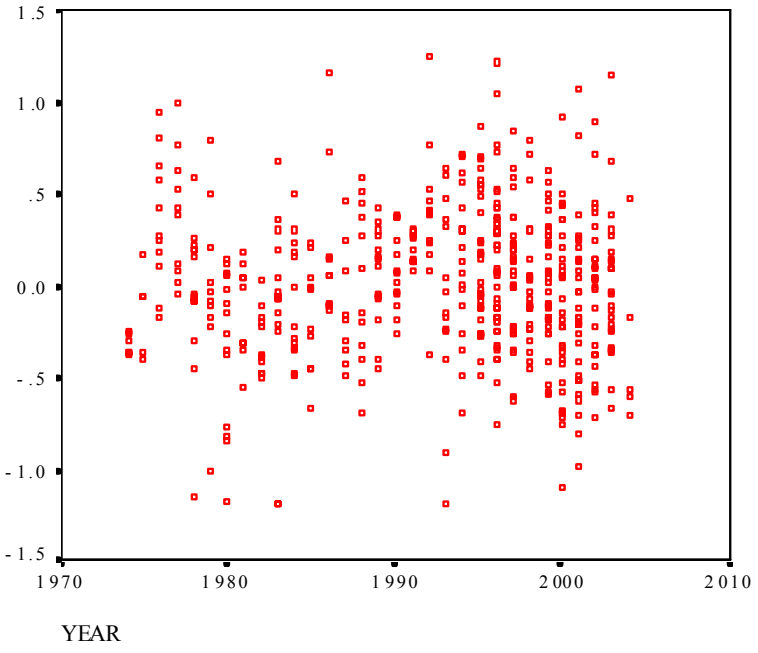
a Predictors: (Constant), YRDMMY, ACRES, MARKED, WILDLIFE, PLAN, DISTRCT, WLPZ, YEAR

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	349.959	9	38.8844	165.5077	.000
	Residual	140.259	597	0.2349		
	Total	490.219	606			

Dependent Variable: LNCOST

	Unstandardized Coefficients				Collinearity Statistics	
Variables	B	Std. Error	t	Sig.	Tolerance	VIF
(Constant)	-63.436720	10.51967	-6.03029	2.869 E-09		
YEAR	0.0357745	0.00531	6.73276	3.916 E-11	.201	4.971
ACRES	0.0001361	2.817 E-05	4.83171	1.723 E-06	.629	1.589
N	-0.5312693	0.06112	-8.691890	3.433 E-17	.565	1.771
S	-0.0912499	0.12878	-0.708545	0.4788833	.732	1.365
MARKED	0.0970915	0.05064	1.917056	0.0557076	.619	1.616
WLPZ	0.4378362	0.06140	7.130071	2.910 E-12	.484	2.064
WILDLIFE	0.2062748	0.06168	3.344031	0.0008774	.544	1.837
PLAN	0.1957316	0.05305	3.689496	0.0002452	.764	1.309
YRDMMY	0.4450336	0.08679	5.127574	3.971 E-07	.221	4.523



Appendix C.5

Statistical Analysis of THP Data
Log-Linear Model with First Order Autoregressive Process

Marquardt constant = .001
Adjusted sum of squares = 140.25932

FINAL PARAMETERS:

Number of residuals	607
Standard error	.46232437
Log likelihood	-387.55237
AIC	797.10474
SBC	845.59856

Analysis of Variance

	DF Adj.	Sum of Squares	Residual Variance
Residuals	596	127.41280	.21374382

Variable	B	SEB	T-RATIO	APPROX. PROB
AR1	.311885	.039224	7.9514832	.00000000
YEAR	.038499	.007136	5.3953043	.00000010
ACRES	.000125	.000028	4.5066795	.00000793
N	-.526700	.072041	-7.3111322	.00000000
S	-.036419	.121231	-.3004115	.76396807
MARKED	.087061	.053271	1.6343047	.10272295
WLPZ	.374341	.060703	6.1668069	.00000000
WILDLIFE	.181391	.063008	2.8788463	.00413453
PLAN	.204133	.062772	3.2520059	.00121064
YRDMMY	.423486	.118257	3.5810714	.00037010
CONSTANT	-68.735702	14.134731	-4.8628941	.00000148

Appendix D

THP Sample Database (607 observations)

Total Cost	Constant $	District	Acres	Year	N	S	Marked	WLPZ	Wildlife	Plan	93 Dummy
$240.00	$1,819.16	2	285	1974	1	0	2	1	1	1	0
$240.00	$1,819.16	2	200	1974	1	0	2	1	1	1	0
$240.00	$1,819.16	2	1065	1974	1	0	2	1	1	1	0
$240.00	$1,819.16	2	940	1974	1	0	2	1	1	1	0
$240.00	$1,819.16	2	556	1974	1	0	2	1	1	1	0
$240.00	$1,819.16	2	1000	1974	1	0	2	1	1	1	0
$240.00	$1,676.96	2	205	1975	1	0	2	1	1	1	0
$240.00	$1,676.96	2	450	1975	1	0	2	1	1	1	0
$480.00	$3,353.92	2	1320	1975	1	0	2	1	2	1	0
$360.00	$2,515.44	2	860	1975	1	0	2	1	1	1	0
$360.00	$2,515.44	2	800	1975	1	0	2	1	1	1	0
$320.00	$2,047.13	2	10	1976	1	0	2	1	1	1	0
$960.00	$6,141.39	2	1822	1976	1	0	2	1	1	1	0
$800.00	$5,117.82	2	1150	1976	1	0	2	1	1	1	0
$640.00	$4,094.26	2	620	1976	1	0	2	1	1	1	0
$800.00	$5,117.82	2	920	1976	1	0	2	2	1	1	0
$1,357.14	$8,682.02	3	76	1976	0	0	1	1	1	1	0
$678.57	$4,341.01	3	38	1976	0	0	1	1	1	1	0
$732.14	$4,683.72	3	41	1976	0	0	1	1	1	1	0
$803.57	$5,140.67	3	45	1976	0	0	1	1	1	1	0
$1,577.38	$10,090.95	3	106	1976	0	0	1	1	1	1	0
$535.71	$3,427.11	3	30	1976	0	0	1	1	1	1	0
$800.00	$4,593.64	2	1230	1977	1	0	2	1	1	1	0
$480.00	$2,756.19	2	35	1977	1	0	2	1	1	1	0
$1,940.57	$11,142.85	3	190	1977	0	0	1	1	1	1	0
$791.55	$4,545.11	3	31	1977	0	0	1	1	1	1	0
$1,506.49	$8,650.37	3	59	1977	0	0	1	1	1	1	0
$1,302.22	$7,477.44	3	51	1977	0	0	1	1	1	1	0
$1,021.35	$5,864.66	3	40	1977	0	0	1	1	1	1	0
$1,174.56	$6,744.36	3	46	1977	0	0	1	1	1	1	0
$714.95	$4,105.26	3	28	1977	0	0	1	1	1	1	0
$663.88	$3,812.03	3	26	1977	0	0	1	1	1	1	0
$480.00	$2,477.10	2	200	1978	1	0	2	1	1	1	0
$480.00	$2,477.10	2	200	1978	1	0	2	1	1	1	0
$480.00	$2,477.10	2	15	1978	1	0	2	1	2	1	0
$480.00	$2,477.10	2	120	1978	1	0	2	1	1	1	0
$640.00	$3,302.79	2	160	1978	1	0	2	1	1	1	0
$640.00	$3,302.79	2	470	1978	1	0	2	1	1	1	0
$253.93	$1,310.45	3	9	1978	0	0	1	1	1	1	0
$981.38	$5,064.54	3	40	1978	0	0	1	1	1	1	0
$1,467.17	$7,571.49	3	104	1978	0	0	1	1	1	1	0
$592.51	$3,057.72	3	21	1978	0	0	1	1	1	1	0

$1,054.99	$5,444.38	3	43	1978	0	0	1	1	1	1	0
$1,015.73	$5,241.80	3	36	1978	0	0	1	1	1	1	0
$761.80	$3,931.35	3	27	1978	0	0	1	1	1	1	0
$507.87	$2,620.90	3	18	1978	0	0	1	1	1	1	0
$1,120.00	$5,115.49	2	2103	1979	1	0	2	2	1	1	0
$480.00	$2,192.35	2	45	1979	1	0	2	1	1	1	0
$1,554.08	$7,098.11	3	68	1979	0	0	1	1	1	1	0
$777.04	$3,549.06	3	34	1979	0	0	1	1	2	1	0
$959.87	$4,384.13	3	42	1979	0	0	1	1	1	1	0
$868.46	$3,966.59	3	38	1979	0	0	1	1	1	1	0
$1,165.56	$5,323.58	3	51	1979	0	0	1	1	1	1	0
$845.60	$3,862.21	3	37	1979	0	0	1	1	1	1	0
$342.81	$1,565.76	3	15	1979	0	0	1	1	1	1	0
$2,102.58	$9,603.33	3	92	1979	0	0	1	1	1	1	0
$800.00	$3,271.04	1	5000	1980	0	1	1	2	2	1	0
$160.00	$654.21	1	40	1980	0	1	1	1	1	1	0
$1,120.00	$4,579.46	2	2504	1980	1	0	2	1	1	1	0
$320.00	$1,308.42	2	1	1980	1	0	2	1	1	1	0
$480.00	$1,962.62	2	830	1980	1	0	2	2	1	1	0
$640.00	$2,616.83	2	521	1980	1	0	2	1	1	1	0
$480.00	$1,962.62	2	124	1980	1	0	2	1	1	1	0
$800.00	$3,271.04	2	611	1980	1	0	2	1	1	1	0
$994.59	$4,066.70	3	25	1980	0	0	1	1	1	1	0
$477.41	$1,952.02	3	10	1980	0	0	1	1	1	1	0
$835.46	$3,416.03	3	21	1980	0	0	1	1	1	1	0
$1,064.98	$4,354.50	3	29	1980	0	0	1	1	1	1	0
$763.85	$3,123.23	3	16	1980	0	0	1	1	1	1	0
$1,177.60	$4,814.97	3	37	1980	0	0	1	1	1	1	0
$1,273	$5,205.38	3	40	1980	0	0	1	1	1	1	0
$334	$1,366.41	3	7	1980	0	0	1	1	1	1	0
$1,125.00	$4,226.86	1	3200	1981	0	1	1	2	2	1	0
$800.00	$3,005.77	2	220	1981	1	0	2	1	1	1	0
$1,000.00	$3,757.21	2	905	1981	1	0	2	1	1	1	0
$1,284.59	$4,826.48	3	46	1981	0	0	1	1	1	1	0
$865.70	$3,252.63	3	31	1981	0	0	1	1	1	1	0
$893.63	$3,357.55	3	32	1981	0	0	1	1	1	1	0
$1,284.59	$4,826.48	3	46	1981	0	0	1	1	1	1	0
$1,489.38	$5,595.92	3	80	1981	0	0	1	1	1	1	0
$893.63	$3,357.55	3	32	1981	0	0	1	1	1	1	0
$893.63	$3,357.55	3	32	1981	0	0	1	1	1	1	0
$698	$2,623.09	3	25	1981	0	0	1	1	1	1	0
$750.00	$2,512.64	1	800	1982	0	1	1	2	2	1	0
$1,200.00	$4,020.23	2	2090	1982	1	0	2	2	1	1	0
$600.00	$2,010.12	2	50	1982	1	0	2	1	1	1	0
$800.00	$2,680.15	2	312	1982	1	0	2	1	1	1	0
$800.00	$2,680.15	2	728	1982	1	0	2	1	1	1	0
$1,172.06	$3,926.63	3	24.5	1982	0	0	1	1	1	1	0
$861.11	$2,884.87	3	9	1982	0	0	1	1	1	1	0
$956.78	$3,205.41	3	10	1982	0	0	1	1	1	1	0

$1,275.71	$4,273.88	3	16	1982	0	0	1	1	1	1	0
$882.71	$2,957.26	3	4	1982	0	0	1	1	1	1	0
$1,483.02	$4,968.39	3	31	1982	0	0	1	1	1	1	0
$878	$2,942.78	3	5	1982	0	0	1	1	1	1	0
$1,250.00	$4,024.86	1	1640	1983	0	1	1	2	2	1	0
$1,250.00	$4,024.86	1	21	1983	0	1	1	1	1	1	0
$1,000.00	$3,219.89	2	615	1983	1	0	2	1	1	1	0
$800.00	$2,575.91	2	70	1983	1	0	2	1	1	1	0
$1,000.00	$3,219.89	2	594	1983	1	0	2	1	1	1	0
$1,000.00	$3,219.89	2	646	1983	1	0	2	1	1	1	0
$1,000.00	$3,219.89	2	1180	1983	1	0	2	1	1	1	0
$800.00	$2,575.91	2	383	1983	1	0	2	1	1	1	0
$1,000.00	$3,219.89	2	431	1983	1	0	2	1	1	1	0
$1,619.95	$5,216.06	3	38	1983	0	0	1	1	1	1	0
$468.93	$1,509.91	3	11	1983	0	0	1	1	1	1	0
$3,069.38	$9,883.06	3	72	1983	0	0	1	1	1	1	0
$468.93	$1,509.91	3	11	1983	0	0	1	1	1	1	0
$2,216.77	$7,137.76	3	52	1983	0	0	1	1	1	1	0
$1,875.73	$6,039.65	3	44	1983	0	0	1	1	1	1	0
$2,089	$6,725.97	3	49	1983	0	0	1	1	1	1	0
$1,449	$4,667.00	3	34	1983	0	0	1	1	1	1	0
$2,000.00	$5,926.94	1	2280	1984	0	1	1	2	2	1	0
$2,400.00	$7,112.32	2	1420	1984	1	0	2	2	2	1	0
$1,400.00	$4,148.86	2	1310	1984	1	0	2	2	2	1	0
$800.00	$2,370.77	2	29	1984	1	0	2	1	1	1	0
$800.00	$2,370.77	2	160	1984	1	0	2	1	1	1	0
$800.00	$2,370.77	2	219	1984	1	0	2	1	1	1	0
$2,053.85	$6,086.52	3	52	1984	0	0	1	1	1	1	0
$1,068.94	$3,167.76	3	22	1984	0	0	1	1	1	1	0
$2,369.83	$7,022.90	3	60	1984	0	0	1	1	1	1	0
$1,382.40	$4,096.69	3	35	1984	0	0	1	1	1	1	0
$1,737.87	$5,150.13	3	44	1984	0	0	1	1	1	1	0
$1,047.49	$3,104.19	3	5	1984	0	0	1	1	1	1	0
$2,093.35	$6,203.56	3	53	1984	0	0	1	1	1	1	0
$2,883	$8,544.53	3	73	1984	0	0	1	1	1	1	0
$2,500.00	$6,661.81	1	1560	1985	0	1	1	2	2	1	0
$2,800.00	$7,461.23	2	1380	1985	1	0	2	2	1	1	0
$2,000.00	$5,329.45	2	820	1985	1	0	2	2	1	1	0
$2,000.00	$5,329.45	2	888	1985	1	0	2	2	2	1	0
$2,096.41	$5,586.35	3	66	1985	0	0	1	1	1	1	0
$1,572.31	$4,189.76	3	33	1985	0	0	1	1	1	1	0
$1,524.66	$4,062.80	3	32	1985	0	0	1	1	1	1	0
$1,262.05	$3,363.02	3	5.5	1985	0	0	1	1	1	1	0
$1,267.04	$3,376.31	3	14	1985	0	0	1	1	1	1	0
$1,024.38	$2,729.69	3	21.5	1985	0	0	1	1	1	1	0
$2,497	$6,652.83	3	78.6	1985	0	0	1	1	1	1	0
$1,280.00	$3,178.83	2	316	1986	1	0	2	1	1	1	0
$1,280.00	$3,178.83	2	7	1986	1	0	2	1	1	1	0
$1,920.00	$4,768.24	2	1810	1986	1	0	2	1	2	1	0

$1,999.53	$4,965.75	3	50	1986	0	0	1	1	1	1	0
$2,599.39	$6,455.47	3	65	1986	0	0	1	1	1	1	0
$2,379.51	$5,909.42	3	52	1986	0	0	1	1	1	1	0
$4,638.90	$11,520.53	3	116	1986	0	0	1	1	1	1	0
$2,619.45	$6,505.30	3	58	1986	0	0	1	1	1	1	0
$1,999.76	$4,966.33	3	25	1986	0	0	1	1	1	1	0
$7,318.27	$18,174.63	3	183	1986	0	0	1	1	1	1	0
$4,250.00	$9,981.01	1	2182	1987	0	1	1	2	2	1	0
$750.00	$1,761.35	1	250	1987	0	1	1	1	1	1	0
$1,280.00	$3,006.05	2	16	1987	1	0	2	1	1	1	0
$2,078.00	$4,880.12	3	57	1987	0	0	1	1	1	1	0
$1,703.05	$3,999.57	3	33	1987	0	0	1	1	1	1	0
$1,812.42	$4,256.42	3	36	1987	0	0	1	1	1	1	0
$3,153.45	$7,405.79	3	86.5	1987	0	0	1	1	1	1	0
$3,900.80	$9,160.92	3	107	1987	0	0	1	1	1	1	0
$2,661.29	$6,249.97	3	73	1987	0	0	1	1	1	1	0
$1,484	$3,485.87	3	27	1987	0	0	1	1	1	1	0
$1,594	$3,742.72	3	30	1987	0	0	1	1	1	1	0
$1,000.00	$2,211.39	1	35	1988	0	1	1	1	1	1	0
$3,840.00	$8,491.74	2	3679	1988	1	0	2	1	1	1	0
$1,600.00	$3,538.22	2	965	1988	1	0	2	1	1	1	0
$1,280.00	$2,830.58	2	317	1988	1	0	2	1	1	1	0
$1,600.00	$3,538.22	2	639	1988	1	0	2	1	1	1	0
$4,468.66	$9,881.94	3	80	1988	0	0	1	1	1	1	0
$4,189.37	$9,264.32	3	75	1988	0	0	1	1	1	1	0
$2,960.49	$6,546.79	3	53	1988	0	0	1	1	1	1	0
$1,782.02	$3,940.73	3	14	1988	0	0	1	1	1	1	0
$1,335.15	$2,952.54	3	6	1988	0	0	1	1	1	1	0
$1,558.58	$3,446.63	3	10	1988	0	0	1	1	1	1	0
$4,859.67	$10,746.61	3	87	1988	0	0	1	1	1	1	0
$3,910	$8,646.70	3	70	1988	0	0	1	1	1	1	0
$3,200.00	$6,571.37	2	1273	1989	1	0	2	1	1	1	0
$3,840.00	$7,885.65	2	3679	1989	1	0	2	2	1	1	0
$1,280.00	$2,628.55	2	480	1989	1	0	2	1	1	1	0
$1,280.00	$2,628.55	2	80	1989	1	0	2	1	1	1	0
$3,200.00	$6,571.37	2	1680	1989	1	0	2	2	1	1	0
$4,480.00	$9,199.92	2	3970	1989	1	0	2	1	2	1	0
$3,545.08	$7,280.01	3	60	1989	0	0	1	1	1	1	0
$3,654.91	$7,505.56	3	62	1989	0	0	1	1	1	1	0
$3,465.57	$7,116.73	3	54	1989	0	0	1	1	1	1	0
$4,613.11	$9,473.27	3	84	1989	0	0	1	1	1	1	0
$2,867.21	$5,887.97	3	34	1989	0	0	1	1	1	1	0
$3,954.09	$8,119.94	3	72	1989	0	0	1	1	1	1	0
$3,355.73	$6,891.18	3	52	1989	0	0	1	1	1	1	0
$2,812.29	$5,775.19	3	33	1989	0	0	1	1	1	1	0
$4,480.00	$8,561.47	2	2372	1990	1	0	2	2	2	1	0
$3,200.00	$6,115.34	2	1101	1990	1	0	2	1	1	1	0
$3,840.00	$7,338.40	2	1958	1990	1	0	2	2	2	1	0
$3,200.00	$6,115.34	2	1294	1990	1	0	2	2	2	1	0

$4,160.00	$7,949.94	2	2154	1990	1	0	2	1	1	1	0
$3,405.97	$6,508.96	3	43	1990	0	0	1	1	1	1	0
$3,964.56	$7,576.45	3	63	1990	0	0	1	2	1	1	0
$4,908.51	$9,380.36	3	78	1990	0	0	1	1	1	1	0
$4,845.58	$9,260.10	3	77	1990	0	0	1	1	1	1	0
$3,646.48	$6,968.58	3	50	1990	0	0	1	1	1	1	0
$3,964.56	$7,576.45	3	63	1990	0	0	1	1	1	1	0
$3,202.54	$6,120.18	3	35	1990	0	0	1	1	1	1	0
$2,569.80	$4,911.00	3	17	1990	0	0	1	1	1	1	0
$20,000.00	$36,121.63	1	860	1991	0	1	1	2	2	1	0
$6,000.00	$10,836.49	2	5600	1991	1	0	2	1	1	1	0
$4,000.00	$7,224.33	2	2380	1991	1	0	2	1	1	1	0
$4,270.74	$7,713.31	3	53	1991	0	0	1	1	1	1	0
$4,813.54	$8,693.65	3	78	1991	0	0	1	1	1	1	0
$3,968.48	$7,167.40	3	40	1991	0	0	1	1	1	1	0
$4,998.68	$9,028.02	3	81	1991	0	0	1	1	1	1	0
$4,179.30	$7,548.16	3	58	1991	0	0	1	1	1	1	0
$4,936.97	$8,916.56	3	80	1991	0	0	1	1	1	1	0
$4,875.26	$8,805.11	3	79	1991	0	0	1	1	1	1	0
$4,209	$7,601.85	3	52	1991	0	0	1	1	1	1	0
$25,000.00	$43,699.78	1	1120	1992	0	1	1	2	2	1	0
$5,600.00	$9,788.75	2	4540	1992	1	0	2	1	2	1	0
$6,000.00	$10,487.95	2	6325	1992	1	0	2	2	2	1	0
$5,943.73	$10,389.60	3	71	1992	0	0	2	2	1	1	0
$5,023.32	$8,780.71	3	55	1992	0	0	1	1	1	1	0
$6,656.76	$11,635.95	3	91	1992	0	0	1	1	1	1	0
$5,778.94	$10,101.54	3	79	1992	0	0	1	1	1	1	0
$5,852.09	$10,229.41	3	80	1992	0	0	1	1	2	1	0
$5,700.16	$9,963.84	3	54	1992	0	0	1	1	2	1	0
$4,926.05	$8,610.69	3	40	1992	0	0	1	1	2	1	0
$5,778.94	$10,101.54	3	79	1992	0	0	1	1	2	1	0
$8,780.00	$15,347.36	3	148	1992	0	0	2	2	1	1	0
$8,417.00	$14,712.84	3	226	1992	0	0	2	1	1	1	0
$14,737	$25,760.15	3	640	1992	0	0	1	1	1	1	0
$30,000.00	$49,611.42	1	3128	1993	0	1	1	2	2	1	1
$4,000.00	$6,614.86	2	3521	1993	1	0	2	2	1	1	1
$2,000.00	$3,307.43	2	735	1993	1	0	2	2	1	1	1
$12,319.74	$20,373.32	3	97	1993	0	0	1	1	2	1	1
$9,271.55	$15,332.50	3	73	1993	0	0	1	1	2	1	1
$4,286.14	$7,088.04	3	18	1993	0	0	1	1	2	1	1
$5,048.18	$8,348.25	3	24	1993	0	0	1	1	2	1	1
$5,453.30	$9,018.19	3	39	1993	0	0	1	1	2	1	1
$5,556.21	$9,188.39	3	28	1993	0	0	1	1	2	1	1
$7,112.43	$11,761.92	3	56	1993	0	0	1	1	1	2	1
$7,620.46	$12,602.05	3	60	1993	0	0	1	1	1	2	1
$5,000.00	$8,268.57	3	7	1993	0	0	2	1	1	1	1
$10,302.00	$17,036.56	3	55	1993	0	0	2	1	1	1	1
$9,064.00	$14,989.26	3	64	1993	0	0	1	1	1	1	1
$17,594	$29,095.44	3	241	1993	0	0	1	2	1	1	1

$35,000.00	$55,100.92	1	5000	1994	0	1	1	2	2	1	1
$10,000.00	$15,743.12	2	426	1994	1	0	1	1	1	1	1
$5,022.60	$7,907.14	3	4	1994	0	0	1	2	2	1	1
$10,843.99	$17,071.83	3	83	1994	0	0	1	1	1	2	1
$6,901.87	$10,865.70	3	49	1994	0	0	1	2	1	2	1
$9,145.54	$14,397.93	3	70	1994	0	0	1	1	1	2	1
$5,959.76	$9,382.52	3	15	1994	0	0	2	1	1	2	1
$14,110.25	$22,213.94	3	108	1994	0	0	1	1	1	2	1
$12,150.50	$19,128.67	3	93	1994	0	0	1	1	1	2	1
$9,537.49	$15,014.98	3	73	1994	0	0	1	1	2	1	1
$9,000.00	$14,168.81	3	160	1994	0	0	1	1	1	1	1
$7,500.00	$11,807.34	3	20	1994	0	0	2	1	1	1	1
$7,000.00	$11,020.18	3	27	1994	0	0	1	1	1	1	1
$5,000.00	$7,871.56	3	14	1994	0	0	1	1	1	1	1
$7,000.00	$11,020.18	3	17	1994	0	0	2	1	1	1	1
$8,920.00	$14,042.86	3	51	1994	0	0	2	2	1	1	1
$14,277.00	$22,476.45	3	62	1994	0	0	2	1	1	1	1
$19,122	$30,103.99	3	198	1994	0	0	1	2	1	1	1
$10,500.00	$15,560.68	2	142	1995	1	0	1	1	1	1	1
$13,500.00	$20,006.59	2	274	1995	1	0	1	2	1	1	1
$6,000.00	$8,891.82	2	24	1995	1	0	2	1	1	1	1
$8,500.00	$12,596.74	2	76	1995	1	0	2	1	1	1	1
$10,000.00	$14,819.70	2	222	1995	1	0	1	1	1	1	1
$6,756.08	$10,012.31	3	56	1995	0	0	1	1	1	2	1
$20,992.11	$31,109.67	3	261	1995	0	0	2	1	1	2	1
$7,248.03	$10,741.36	3	43.5	1995	0	0	1	1	1	2	1
$5,774.82	$8,558.11	3	23	1995	0	0	1	1	1	2	1
$7,841.88	$11,621.43	3	65	1995	0	0	2	1	1	2	1
$6,514.79	$9,654.73	3	54	1995	0	0	2	1	1	2	1
$5,292.24	$7,842.94	3	19	1995	0	0	1	1	1	2	1
$6,000.00	$8,891.82	3	66	1995	0	0	1	1	1	1	1
$10,500.00	$15,560.68	3	388	1995	0	0	1	1	1	1	1
$14,000.00	$20,747.58	3	262	1995	0	0	1	1	1	1	1
$14,000.00	$20,747.58	3	233	1995	0	0	1	1	1	1	1
$7,000.00	$10,373.79	3	47	1995	0	0	1	1	1	1	1
$17,000.00	$25,193.49	3	238	1995	0	0	1	2	1	1	1
$7,000.00	$10,373.79	3	15	1995	0	0	1	1	1	1	1
$7,500.00	$11,114.77	3	58	1995	0	0	1	1	1	1	1
$7,000.00	$10,373.79	3	35	1995	0	0	1	1	1	1	1
$7,500.00	$11,114.77	3	57	1995	0	0	1	1	1	1	1
$8,000.00	$11,855.76	3	49	1995	0	0	1	1	1	1	1
$9,500.00	$14,078.71	3	114	1995	0	0	1	1	1	1	1
$7,250.00	$10,744.28	3	34	1995	0	0	2	1	1	1	1
$7,500.00	$11,114.77	3	38	1995	0	0	2	1	1	1	1
$6,000.00	$8,891.82	3	29	1995	0	0	1	1	1	1	1
$6,000.00	$8,891.82	3	20	1995	0	0	1	1	1	1	1
$9,000.00	$13,337.73	3	31	1995	0	0	2	1	2	1	1
$14,317.00	$21,217.36	3	20	1995	0	0	1	2	1	1	1
$12,702.00	$18,823.98	3	53	1995	0	0	2	2	1	1	1

$17,945.00	$26,593.95	3	137	1995	0	0	2	2	1	1	1
$15,650.00	$23,192.83	3	171	1995	0	0	2	1	1	1	1
$83,040.00	$117,649.21	1	2731	1996	0	1	1	2	2	1	1
$9,600.00	$13,601.07	2	3640	1996	1	0	2	1	2	1	1
$7,200.00	$10,200.80	2	2630	1996	1	0	2	1	1	1	1
$9,600.00	$13,601.07	2	3280	1996	1	0	2	1	1	1	1
$12,500.00	$17,709.72	2	321	1996	1	0	1	1	1	1	1
$7,800.00	$11,050.87	2	142	1996	1	0	1	1	1	1	1
$7,000.00	$9,917.44	2	33	1996	1	0	1	1	1	1	1
$8,500.00	$12,042.61	2	49	1996	1	0	1	1	1	1	1
$10,500.00	$14,876.17	2	131	1996	1	0	2	2	1	1	1
$7,500.00	$10,625.83	2	71	1996	1	0	1	1	1	1	1
$7,500.00	$10,625.83	2	107	1996	1	0	1	1	1	1	1
$6,000.00	$8,500.67	2	27	1996	1	0	1	1	1	1	1
$8,000.00	$11,334.22	2	112	1996	1	0	1	1	1	1	1
$4,000.00	$5,667.11	2	39	1996	1	0	1	1	1	1	1
$7,000.00	$9,917.44	2	39	1996	1	0	1	1	1	1	1
$8,000.00	$11,334.22	2	58	1996	1	0	1	1	1	1	1
$8,500.00	$12,042.61	2	74	1996	1	0	1	1	1	1	1
$10,900.00	$15,442.88	2	111	1996	1	0	2	2	1	1	1
$6,000.00	$8,500.67	2	40	1996	1	0	1	1	1	1	1
$8,058.96	$11,417.76	3	39	1996	0	0	2	1	2	2	1
$12,875.06	$18,241.10	3	70	1996	0	0	1	1	1	2	1
$6,330.37	$8,968.73	3	15	1996	0	0	1	1	1	2	1
$6,762.52	$9,580.98	3	21	1996	0	0	1	1	1	2	1
$6,330.37	$8,968.73	3	15	1996	0	0	1	1	1	2	1
$7,350.02	$10,413.35	3	28	1996	0	0	1	1	1	2	1
$19,419.75	$27,513.47	3	250	1996	0	0	2	1	2	2	1
$9,457.19	$13,398.73	3	48	1996	0	0	1	1	1	2	1
$7,500.00	$10,625.83	3	22	1996	0	0	1	1	1	1	1
$7,200.00	$10,200.80	3	49	1996	0	0	1	1	1	1	1
$7,000.00	$9,917.44	3	17	1996	0	0	2	1	1	1	1
$8,000.00	$11,334.22	3	72	1996	0	0	1	1	1	1	1
$6,675.00	$9,456.99	3	41	1996	0	0	1	1	1	1	1
$7,000.00	$9,917.44	3	33	1996	0	0	1	1	1	1	1
$5,000.00	$7,083.89	3	12	1996	0	0	1	1	1	1	1
$14,250.00	$20,189.08	3	279	1996	0	0	2	1	1	1	1
$13,000.00	$18,418.11	3	85	1996	0	0	2	1	1	1	1
$7,000.00	$9,917.44	3	41	1996	0	0	2	1	1	1	1
$4,000.00	$5,667.11	3	30	1996	0	0	1	1	1	1	1
$7,000.00	$9,917.44	3	45	1996	0	0	1	1	1	1	1
$6,000.00	$8,500.67	3	80	1996	0	0	1	1	1	1	1
$17,000.00	$24,085.22	3	452	1996	0	0	1	1	1	2	1
$7,288.00	$10,325.48	3	14	1996	0	0	2	1	1	1	1
$10,079.00	$14,279.70	3	34	1996	0	0	2	1	1	1	1
$41,587.00	$58,919.53	3	163	1996	0	0	1	2	1	1	1
$34,444	$48,799.49	3	196	1996	0	0	2	2	1	1	1
$93,420.00	$125,257.85	1	3237	1997	0	1	1	2	2	1	1
$9,600.00	$12,871.71	2	2190	1997	1	0	2	1	1	1	1

$8,640.00	$11,584.54	2	2120	1997	1	0	2	2	2	1	1
$8,640.00	$11,584.54	2	980	1997	1	0	2	1	1	1	1
$10,515.00	$14,098.55	2	155	1997	1	0	1	1	1	1	1
$11,000.00	$14,748.84	2	112	1997	1	0	1	1	1	1	1
$7,500.00	$10,056.02	2	63	1997	1	0	1	1	1	1	1
$6,000.00	$8,044.82	2	18	1997	1	0	1	1	1	1	1
$6,000.00	$8,044.82	2	14	1997	1	0	1	1	1	1	1
$8,046.33	$10,788.55	3	40	1997	0	0	1	1	1	2	1
$11,975.77	$16,057.15	3	87	1997	0	0	1	1	1	2	1
$11,985.04	$16,069.58	3	95	1997	0	0	1	1	2	2	1
$7,163.22	$9,604.47	3	33	1997	0	0	1	1	1	2	1
$8,172.49	$10,957.70	3	41	1997	0	0	1	1	1	2	1
$15,138.99	$20,298.41	3	120	1997	0	0	1	1	1	2	1
$20,059.17	$26,895.40	3	159	1997	0	0	1	1	1	2	1
$15,138.99	$20,298.41	3	120	1997	0	0	1	1	1	2	1
$7,500.00	$10,056.02	3	41	1997	0	0	1	1	1	1	1
$16,000.00	$21,452.85	3	129	1997	0	0	2	2	1	1	1
$14,015.00	$18,791.36	3	139	1997	0	0	2	2	1	1	1
$6,500.00	$8,715.22	3	19	1997	0	0	1	1	1	1	1
$7,000.00	$9,385.62	3	28	1997	0	0	2	1	1	1	1
$7,500.00	$10,056.02	3	74	1997	0	0	1	1	1	1	1
$9,500.00	$12,737.63	3	94	1997	0	0	1	1	1	1	1
$5,000.00	$6,704.02	3	58	1997	0	0	1	1	1	1	1
$17,000.00	$22,793.66	3	169	1997	0	0	1	2	1	1	1
$14,500.00	$19,441.65	3	74	1997	0	0	1	2	1	1	1
$7,005.00	$9,392.33	3	20	1997	0	0	2	2	1	1	1
$17,388.00	$23,313.89	3	160	1997	0	0	2	2	1	1	1
$31,915	$42,791.74	3	423	1997	0	0	2	2	1	1	1
$24,683.00	$33,095.05	3	196.753	1997	0	0	2	2	2	1	1
$33,942.00	$45,509.55	3	95.408	1997	0	0	2	2	2	1	1
$12,244.00	$16,416.80	3	65.781	1997	0	0	2	2	2	1	1
$16,823.00	$22,556.33	3	155.546	1997	0	0	2	2	2	1	1
$16,195.00	$21,714.31	3	69.799	1997	0	0	2	2	2	1	1
$10,123.00	$13,572.95	3	59.822	1997	0	0	2	2	2	1	1
$18,239.00	$24,454.91	3	189.878	1997	0	0	2	2	2	1	1
$9,120.00	$11,510.28	2	2450	1998	1	0	2	1	1	2	1
$11,520.00	$14,539.30	2	5680	1998	1	0	2	1	1	2	1
$9,600.00	$12,116.09	2	1603	1998	1	0	2	2	1	2	1
$8,640.00	$10,904.48	2	812	1998	1	0	2	1	1	2	1
$6,000.00	$7,572.55	2	11	1998	1	0	1	1	1	1	1
$7,000.00	$8,834.65	2	41	1998	1	0	1	1	1	1	1
$6,000.00	$7,572.55	2	27	1998	1	0	1	1	1	1	1
$6,500.00	$8,203.60	2	52	1998	1	0	1	1	1	1	1
$15,586.02	$19,670.99	3	124	1998	0	0	1	1	1	2	1
$9,033.30	$11,400.86	3	48	1998	0	0	1	1	1	2	1
$9,284.68	$11,718.13	3	50	1998	0	0	1	1	1	2	1
$10,290.23	$12,987.23	3	58	1998	0	0	1	1	1	2	1
$23,756.11	$29,982.40	3	189	1998	0	0	1	1	1	2	1
$9,027.75	$11,393.85	3	40	1998	0	0	1	1	1	2	1

$26,018.59	$32,837.87	3	207	1998	0	0	1	1	1	2	1
$10,667.32	$13,463.14	3	61	1998	0	0	1	1	1	2	1
$7,500.00	$9,465.69	3	27	1998	0	0	1	1	1	2	1
$9,000.00	$11,358.83	3	104	1998	0	0	2	1	1	1	1
$6,500.00	$8,203.60	3	17	1998	0	0	1	1	1	1	1
$11,966.00	$15,102.20	3	27	1998	0	0	1	1	1	1	1
$14,764.00	$18,633.53	3	66	1998	0	0	2	2	1	1	1
$26,289.00	$33,179.15	3	261	1998	0	0	2	2	1	1	1
$20,045.00	$25,298.64	3	306	1998	0	0	2	2	1	1	1
$6,401.00	$8,078.65	3	63.82	1998	0	0	2	2	2	1	1
$22,694.00	$28,641.92	3	164.943	1998	0	0	2	2	2	1	1
$44,617.00	$56,310.77	3	96.472	1998	0	0	2	2	2	1	1
$9,586.00	$12,098.42	3	38.468	1998	0	0	2	2	2	1	1
$15,743.00	$19,869.12	3	126.384	1998	0	0	2	2	2	1	1
$20,697.00	$26,121.53	3	125.057	1998	0	0	2	2	2	1	1
$20,455.00	$25,816.10	3	132.559	1998	0	0	2	2	2	1	1
$35,988.00	$45,420.18	3	154.643	1998	0	0	2	2	2	1	1
$194,625.00	$233,204.12	1	3515	1999	0	1	1	2	2	1	1
$19,200.00	$23,005.88	2	7065	1999	1	0	2	1	2	2	1
$9,600.00	$11,502.94	2	1000	1999	1	0	2	1	2	2	1
$10,200.00	$12,221.87	2	1637	1999	1	0	2	1	1	2	1
$8,400.00	$10,065.07	2	670	1999	1	0	2	1	1	2	1
$8,105.00	$9,711.60	2	36	1999	1	0	2	2	1	1	1
$9,119.00	$10,926.59	2	140	1999	1	0	2	1	1	1	1
$22,260.00	$26,672.44	3	263	1999	0	0	1	2	2	1	1
$20,898.30	$25,040.82	3	86	1999	0	0	1	2	2	1	1
$16,465.66	$19,729.53	3	73	1999	0	0	1	1	1	2	1
$16,841.58	$20,179.97	3	112	1999	0	0	1	1	2	2	1
$11,277.85	$13,513.37	3	50	1999	0	0	1	1	1	2	1
$10,375.62	$12,432.30	3	46	1999	0	0	1	1	1	2	1
$10,296.72	$12,337.77	3	39	1999	0	0	1	1	1	2	1
$10,522.28	$12,608.03	3	40	1999	0	0	1	1	1	2	1
$14,984.53	$17,954.81	3	62	1999	0	0	1	2	1	2	1
$14,758.97	$17,684.54	3	61	1999	0	0	1	1	1	2	1
$7,000	$8,387.56	3	105	1999	0	0	1	1	1	2	1
$8,500.00	$10,184.89	3	165	1999	0	0	2	1	1	1	1
$12,500.00	$14,977.79	3	247	1999	0	0	1	1	1	1	1
$22,000.00	$26,360.90	3	752	1999	0	0	1	1	1	2	1
$18,750.00	$22,466.68	3	344	1999	0	0	2	1	1	1	1
$6,500.00	$7,788.45	3	23	1999	0	0	1	1	1	1	1
$14,000.00	$16,775.12	3	88	1999	0	0	2	1	1	1	1
$6,200.00	$7,428.98	3	35	1999	0	0	1	1	1	1	1
$17,500.00	$20,968.90	3	305	1999	0	0	1	2	1	1	1
$7,200.00	$8,627.20	3	42	1999	0	0	2	1	1	1	1
$17,500.00	$20,968.90	3	271	1999	0	0	1	1	1	1	1
$10,500.00	$12,581.34	3	316	1999	0	0	1	1	1	1	1
$8,392.00	$10,055.49	3	23	1999	0	0	2	1	1	1	1
$14,041.00	$16,824.25	3	70	1999	0	0	2	2	1	1	1
$29,308.00	$35,117.51	3	122	1999	0	0	2	2	1	1	1

$27,559.00	$33,021.82	3	113	1999	0	0	2	2	1	1	1
$73,848.00	$88,486.36	3	155.606	1999	0	0	2	2	2	1	1
$69,729.00	$83,550.88	3	222.099	1999	0	0	2	2	2	1	1
$35,900.00	$43,016.20	3	40.114	1999	0	0	1	2	2	1	1
$64,829.00	$77,679.59	3	93.522	1999	0	0	2	2	2	1	1
$26,409.00	$31,643.87	3	43.897	1999	0	0	2	2	2	1	1
$40,758.00	$48,837.17	3	267.657	1999	0	0	2	2	2	1	1
$18,184.00	$21,788.48	3	47.161	1999	0	0	2	2	2	1	1
$53,822.00	$64,490.75	3	102.296	1999	0	0	2	2	2	1	1
$16,800.00	$18,997.60	2	1347	2000	1	0	2	2	1	1	1
$12,000.00	$13,569.72	2	1915	2000	1	0	2	1	1	1	1
$13,200.00	$14,926.69	2	687	2000	1	0	2	2	2	1	1
$8,920.00	$10,086.82	2	186	2000	1	0	2	1	1	1	1
$8,400.00	$9,498.80	2	88	2000	1	0	2	1	1	1	1
$14,550.00	$16,453.28	3	132	2000	0	0	1	2	2	1	1
$12,716.00	$14,379.38	3	167	2000	0	0	1	2	2	1	1
$10,934.40	$12,364.73	3	32	2000	0	0	1	1	1	2	1
$10,934.40	$12,364.73	3	32	2000	0	0	1	1	1	2	1
$17,733.00	$20,052.65	3	115	2000	0	0	2	1	1	2	1
$32,227.80	$36,443.51	3	209	2000	0	0	1	2	2	2	1
$20,662.80	$23,365.69	3	134	2000	0	0	1	2	2	2	1
$12,868.80	$14,552.16	3	64	2000	0	0	1	1	1	2	1
$11,593.20	$13,109.70	3	46	2000	0	0	1	1	2	2	1
$19,737.60	$22,319.47	3	128	2000	0	0	1	1	1	2	1
$8,000.00	$9,046.48	3	36	2000	0	0	1	1	1	2	1
$6,000.00	$6,784.86	3	40	2000	0	0	2	1	1	1	1
$8,000.00	$9,046.48	3	14	2000	0	0	1	1	1	1	1
$8,300.00	$9,385.72	3	45	2000	0	0	2	1	1	1	1
$8,000.00	$9,046.48	3	27	2000	0	0	2	1	1	1	1
$4,000.00	$4,523.24	3	13	2000	0	0	2	1	1	1	1
$7,000.00	$7,915.67	3	27	2000	0	0	1	1	1	2	1
$6,500.00	$7,350.26	3	50	2000	0	0	1	1	1	2	1
$7,750.00	$8,763.78	3	147	2000	0	0	1	1	1	2	1
$15,000.00	$16,962.15	3	307	2000	0	0	1	1	1	2	1
$6,000.00	$6,784.86	3	37	2000	0	0	2	1	1	1	1
$6,000.00	$6,784.86	3	21	2000	0	0	1	1	1	1	1
$12,015.00	$13,586.68	3	27	2000	0	0	2	2	2	1	1
$26,723.00	$30,218.63	3	26	2000	0	0	2	2	1	1	1
$30,238.00	$34,193.42	3	85	2000	0	0	2	1	1	1	1
$26,726.00	$30,222.02	3	109	2000	0	0	2	2	1	1	1
$24,767.00	$28,006.76	3	116	2000	0	0	2	2	1	1	1
$48,922.00	$55,321.47	3	100.576	2000	0	0	2	2	2	2	1
$62,473.00	$70,645.08	3	58.609	2000	0	0	2	2	2	2	1
$22,933.00	$25,932.86	3	67.795	2000	0	0	2	2	2	2	1
$19,420.00	$21,960.32	3	27.239	2000	0	0	2	2	2	2	1
$25,686.00	$29,045.98	3	74.813	2000	0	0	2	2	2	2	1
$38,941.00	$44,034.86	3	92.649	2000	0	0	2	2	2	2	1
$49,816.00	$56,332.42	3	151.525	2000	0	0	2	2	2	2	1
$85,466.00	$96,645.78	3	52.312	2000	0	0	2	2	2	2	1

$207,600.00	$221,638.47	1	3128	2001	0	1	1	2	2	1	1
$18,000.00	$19,217.21	2	3481	2001	1	0	2	2	1	1	1
$10,380	$11,081.92	2	79	2001	1	0	2	2	1	1	1
$10,200.00	$10,889.75	2	140	2001	1	0	2	2	1	1	1
$21,037.21	$22,459.80	3	155	2001	0	0	1	2	2	1	1
$14,700.00	$15,694.05	3	131	2001	0	0	1	2	2	1	1
$15,700.00	$16,761.68	3	173	2001	0	0	1	2	2	1	1
$20,421.98	$21,802.97	3	216	2001	0	0	1	2	2	1	1
$24,998.52	$26,688.99	3	238	2001	0	0	1	2	2	1	1
$9,494.76	$10,136.82	3	121	2001	0	0	1	2	2	1	1
$12,537.63	$13,385.46	3	97	2001	0	0	1	2	2	1	1
$18,710.37	$19,975.62	3	165	2001	0	0	1	2	2	1	1
$14,590.85	$15,577.53	3	60	2001	0	0	1	1	1	2	1
$12,402.23	$13,240.90	3	51	2001	0	0	1	1	1	2	1
$20,036.00	$21,390.89	3	103	2001	0	0	1	1	1	2	1
$18,706.22	$19,971.19	3	100	2001	0	0	1	1	1	2	1
$12,645.41	$13,500.52	3	52	2001	0	0	1	1	1	2	1
$34,315.00	$36,635.47	3	85	2001	0	0	1	1	1	2	1
$12,159.05	$12,981.27	3	50	2001	0	0	1	1	1	2	1
$17,225.31	$18,390.14	3	85	2001	0	0	2	1	1	2	1
$5,000.00	$5,338.11	3	9	2001	0	0	1	1	1	1	1
$8,000.00	$8,540.98	3	34	2001	0	0	1	1	1	1	1
$11,000.00	$11,743.85	3	22	2001	0	0	1	1	1	2	1
$8,000.00	$8,540.98	3	16	2001	0	0	1	1	1	2	1
$16,000.00	$17,081.96	3	262	2001	0	0	1	1	1	1	1
$8,000.00	$8,540.98	3	13	2001	0	0	1	1	1	1	1
$6,000.00	$6,405.74	3	11	2001	0	0	1	1	1	1	1
$8,000.00	$8,540.98	3	26	2001	0	0	1	1	1	1	1
$8,000.00	$8,540.98	3	58	2001	0	0	1	1	1	1	1
$7,211.00	$7,698.63	3	4	2001	0	0	2	1	1	1	1
$7,967.00	$8,505.75	3	12	2001	0	0	2	1	1	1	1
$19,150.00	$20,444.97	3	20	2001	0	0	2	1	1	1	1
$17,298.00	$18,467.74	3	56	2001	0	0	2	1	1	1	1
$38,853.00	$41,480.34	3	113	2001	0	0	2	1	1	1	1
$50,107.00	$53,495.37	3	52.35	2001	0	0	2	2	2	2	1
$58,240.00	$62,178.34	3	65.784	2001	0	0	2	2	2	2	1
$45,471.00	$48,545.87	3	83.307	2001	0	0	2	2	2	2	1
$179,770.00	$191,926.53	3	162.23	2001	0	0	2	2	2	2	1
$61,922.00	$66,109.33	3	72.015	2001	0	0	2	2	2	2	1
$47,772.00	$51,002.47	3	68.838	2001	0	0	2	2	2	2	1
$83,489.00	$89,134.75	3	140.492	2001	0	0	2	2	2	2	1
$80,367.00	$85,801.63	3	67.944	2001	0	0	2	2	2	2	1
$18,600.00	$19,299.84	2	2240	2002	1	0	2	2	2	1	1
$15,000.00	$15,564.39	2	3662	2002	1	0	2	2	2	1	1
$17,400.00	$18,054.69	2	2136	2002	1	0	2	2	2	1	1
$15,600.00	$16,186.96	2	3654	2002	1	0	2	2	2	1	1
$32,615.00	$33,842.17	2	160	2002	1	0	2	2	1	1	1
$7,575.00	$7,860.02	2	58	2002	1	0	2	2	1	1	1
$13,355.00	$13,857.49	2	115	2002	1	0	2	2	2	1	1

$8,945.00	$9,281.56	2	58	2002	1	0	2	2	1	1	1
$20,345.50	$21,111.02	3	216	2002	0	0	1	2	2	1	1
$11,550.00	$11,984.58	3	154	2002	0	0	1	2	2	1	1
$16,422.00	$17,039.89	3	182	2002	0	0	1	2	2	1	1
$13,194.00	$13,690.44	3	181	2002	0	0	1	2	2	1	1
$18,354.50	$19,045.10	3	234	2002	0	0	1	2	2	1	1
$32,992	$34,233.35	3	342	2002	0	0	1	2	2	1	1
$24,100.00	$25,006.78	3	82	2002	0	0	1	1	2	2	1
$20,702.66	$21,481.61	3	92	2002	0	0	1	1	1	2	1
$16,726.76	$17,356.12	3	61	2002	0	0	1	1	1	2	1
$22,052.83	$22,882.59	3	98	2002	0	0	1	1	1	2	1
$32,254.14	$33,467.73	3	172	2002	0	0	2	1	2	2	1
$18,752.02	$19,457.58	3	70	2002	0	0	1	1	1	2	1
$34,054.37	$35,335.70	3	227	2002	0	0	2	2	1	2	1
$26,103.35	$27,085.51	3	116	2002	0	0	2	2	1	2	1
$11,340.00	$11,766.68	3	118	2002	0	0	1	2	1	2	1
$8,000.00	$8,301.01	3	57	2002	0	0	1	1	1	1	1
$16,000.00	$16,602.01	3	164	2002	0	0	2	1	1	1	1
$16,000.00	$16,602.01	3	110	2002	0	0	1	1	1	1	1
$16,000.00	$16,602.01	3	184	2002	0	0	1	2	1	2	1
$58,028.00	$60,211.35	3	108.342	2002	0	0	2	2	2	2	1
$47,648.00	$49,440.80	3	100.961	2002	0	0	2	2	2	2	1
$51,906.00	$53,859.01	3	201.251	2002	0	0	2	2	2	2	1
$54,063.00	$56,097.17	3	103.773	2002	0	0	2	2	2	2	1
$39,104.00	$40,575.32	3	70.604	2002	0	0	2	2	2	2	1
$65,568.00	$68,035.05	3	70.487	2002	0	0	2	2	2	2	1
$33,151.00	$34,398.33	3	68.269	2002	0	0	2	2	2	2	1
$49,570.00	$51,435.11	3	78.37	2002	0	0	2	2	2	2	1
$12,975.00	$12,975.00	1	19	2003	0	1	1	1	1	1	1
$10,721.04	$10,721.04	2	13	2003	1	0	1	1	1	2	1
$36,212.31	$36,212.31	2	288	2003	1	0	2	1	1	2	1
$14,400.00	$14,400.00	2	1930	2003	1	0	2	2	1	2	1
$21,600.00	$21,600.00	2	1391	2003	1	0	2	2	2	2	1
$16,800.00	$16,800.00	2	1563	2003	1	0	2	2	2	2	1
$11,000.00	$11,000.00	2	40	2003	1	0	2	2	1	1	1
$15,723.00	$15,723.00	2	160	2003	1	0	2	2	1	1	1
$18,298.00	$18,298.00	3	286	2003	0	0	1	2	2	1	1
$15,927.00	$15,927.00	3	285	2003	0	0	1	2	2	1	1
$22,000.00	$22,000.00	3	304	2003	0	0	1	2	2	1	1
$24,934.00	$24,934.00	3	321	2003	0	0	1	2	2	1	1
$34,000.00	$34,000.00	3	512	2003	0	0	1	2	2	1	1
$17,492.00	$17,492.00	3	170	2003	0	0	1	2	2	1	1
$23,470.94	$23,470.94	3	80	2003	0	0	1	1	1	2	1
$19,715.59	$19,715.59	3	56	2003	0	0	1	1	1	2	1
$12,241.68	$12,241.68	3	21	2003	0	0	1	1	1	2	1
$14,522.64	$14,522.64	3	33	2003	0	0	1	1	1	2	1
$20,746.63	$20,746.63	3	66	2003	0	0	1	1	1	2	1
$18,923.45	$18,923.45	3	43	2003	0	0	1	1	1	2	1
$12,000.00	$12,000.00	3	68	2003	0	0	1	1	1	2	1

$8,500.00	$8,500.00	3	9	2003	0	0	2	1	1	1	1
$14,000.00	$14,000.00	3	100	2003	0	0	1	1	1	1	1
$30,105.00	$30,105.00	3	161	2003	0	0	2	1	1	1	1
$29,358.00	$29,358.00	3	251	2003	0	0	2	2	1	1	1
$11,200.00	$11,200.00	3	60	2003	0	0	2	2	1	1	1
$108,310.00	$108,310.00	3	190.737	2003	0	0	2	2	2	2	1
$60,639.00	$60,639.00	3	172.573	2003	0	0	2	2	2	2	1
$31,761.00	$31,761.00	3	110.685	2003	0	0	2	2	2	2	1
$82,309.00	$82,309.00	3	143.044	2003	0	0	2	2	2	2	1
$59,442.00	$59,442.00	3	227.622	2003	0	0	2	2	2	1	1
$27,776.00	$27,776.00	3	63.585	2003	0	0	2	2	2	2	1
$33,009.00	$33,009.00	3	97.818	2003	0	0	2	2	2	2	1
$21,107.00	$21,107.00	3	90.297	2003	0	0	2	2	2	2	1
$8,000.00	$7,766.99	3	28	2004	0	0	2	1	1	1	1
$8,750.00	$8,495.15	3	30	2004	0	0	2	1	1	1	1
$9,000.00	$8,737.86	3	8	2004	0	0	2	1	1	1	1
$19,528.00	$18,959.22	3	47	2004	0	0	1	2	2	1	1
$26,562.00	$25,788.35	3	72	2004	0	0	1	1	1	1	1
$35,937.00	$34,890.29	3	95.353	2004	0	0	2	2	2	2	1
$29,049.00	$28,202.91	3	66.263	2004	0	0	2	2	2	2	1
$34,091.00	$33,098.06	3	44.188	2004	0	0	2	2	2	2	1
$30,825.00	$29,927.18	3	124.375	2004	0	0	2	2	2	2	1
$69,058.00	$67,046.60	3	122.262	2004	0	0	2	2	2	2	1
$30,125.00	$29,247.57	3	67.294	2004	0	0	2	2	2	2	1
$32,494.00	$31,547.57	3	64.057	2004	0	0	2	2	2	2	1
$23,824.00	$23,130.10	3	41.778	2004	0	0	2	2	2	2	1